Conference Program

2025 the 11th International Conference on Computer and Communications

2025 年第十一届计算机与通信国际会议

Chengdu, China (中国成都)

Decemebr 12-15, 2025 UTC+8 (2025 年 12 月 12-15 日)

Crowne Plaza 成都武侯渝江皇冠假日酒店

Add: No.42 Xiashahepu Street, Jinjiang District, Chengdu, Sichuan, China

地址：四川省成都市武侯区潮音路 2 号

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Conference Photo Live 照片直播

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General Information

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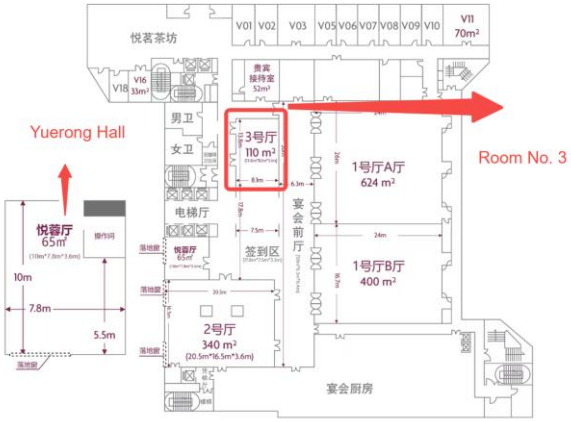
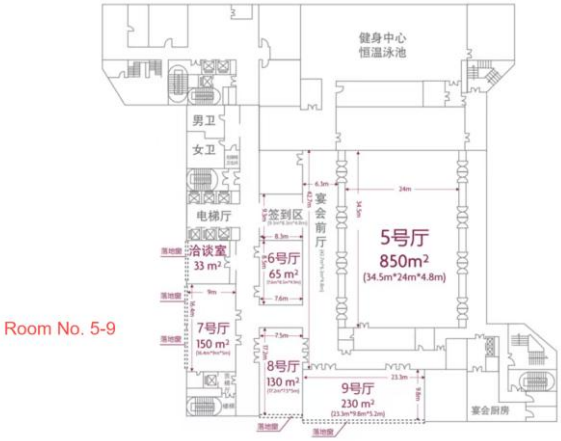
Scan the QR code to reserve a room
扫码预定房间



3F 3楼会议室平面图



5F 5楼会议室平面图

- **Meeting room information**

Level	Meeting Room	Dec. 12	Dec. 13	Dec. 14
1F	Hotel Lobby (酒店大堂)	Sign-in	Sign-in	Sign-in
	West Restaurant (维多利亚西餐厅)	/	Lunch	/
2F	Chinese Restaurant (悦轩中餐厅)	/	/	Lunch & Dinner
3F	Room No. 3 (3 号厅)	/	Oral Session 1 & 6	Oral Session 11 Special Session 7
	Yuerong Hall (悦蓉厅)	/	Oral Session 2 & 7	Oral Session 8 & 12
5F	Room No. 5 (5 号厅)	/	Keynote Speech Banquet	/
	Room No. 6 (6 号厅)	/	Oral Session 3 Special Session 2	Oral Session 9 & 13
	Room No. 7 (7 号厅)	/	Oral Session 4 Special Session 5	Oral Session 10 Special Session 11
	Room No. 8 (8 号厅)	/	Oral Session 5 Special Session 8	/
	Room No. 9 (9 号厅)	/	Poster Session 1-4	Keynote Speech

- **Transportation information**

From Shuangliu Airport (成都双流国际机场)	From Tianfu Airport (成都天府国际机场)	From Chengdudong Railway Station (成都东站)
Metro Option **• Take Line 19→Line 17 to Jitouqiao Station Exit C, then walk for 6mins (19 号线→17 号线换乘，机投桥站 C 出口，步行 6 分钟)** **Approx. 40 mins** **Car Option** **• Taxi / Didi (出租/网约车)** **Approx. 20-30 mins**	**Metro Option** **• Take Line 18→Line 9 to Jitouqiao Station Exit C, then walk for 6mins (18 号线→9 号线换乘，机投桥站 C 出口，步行 6 分钟)** **Approx. 80 mins** **Car Option** **• Taxi / Didi (出租/网约车)** **Approx. 50-60 mins**	**Metro Option** **• Take Line 2→Line 4→Line 9 to Jitouqiao Station Exit C, then walk for 6mins (2 号线→4 号线→9 号线换乘，机投桥站 C 出口，步行 6 分钟)** **Approx. 30 mins** **Car Option** **• Taxi / Didi (出租/网约车)** **Approx. 25-35 mins**
Tip: Peak traffic hours-may add 15+ mins		

1-Onsite Registration

Registration desk (Hotel Lobby) → Inform the staff of your paper ID→ Sign-in→ Claim your conference kit.

2-Devices Provided by the Organizer

Laptops (with MS-Office & Adobe Reader) / Projectors & Screen / Laser Sticks

3-Materials Provided by the Presenter

Oral Session: Slides (PPT or PDF version. Format 16:9 is preferred. Official language: English). Template

Poster Size: A1, Official language: English. Template

4-Duration of Each Presentation

Keynote Speech: 40mins, including Q&A / Invited Speech: 20mins, including Q&A

Oral Session: 15mins, including Q&A (Onsite+Online) / Poster Session: 5mins, including Q&A

5-Zoom Meeting ID (Dec. 14-15 Online Oral Sessions)

	Meeting ID	Dec. 14	Dec. 15
zoom Zoom Download	Zoom A: 819 0941 6703 https://us02web.zoom.us/j/81909416703	Online Session 1 & 6	Online Session 11 & 15 & 19
	Zoom B: 889 1235 9993 https://us02web.zoom.us/j/88912359993	Online Session 2 & 7	Online Session 12 & 16 & 20
	Zoom C: 872 3009 7202 https://us02web.zoom.us/j/87230097202	Online Session 3 & 8	Online Session 13 & 17 & 21
	Zoom D: 847 0940 6734 https://us02web.zoom.us/j/84709406734	Online Session 4 & 9	Online Session 14 & 18 & 22
	Zoom E: 898 6687 5208 https://us02web.zoom.us/j/89866875208	Online Session 5 & 10	Special Session 1 & 9

Presentation Process by Zoom Meeting

Step 1

Turn on the camera and open slides

Step 2

Brief

self-introduction

Step 3

Share screen (Shortcut: Alt+S)

Step 4

Q&A time, unmute yourself, or type your question in the chat box

Step 5

A best presentation will be selected from each session

About the Presentation

- Each presenter is allocated 15 minutes, including Q&A. Please ensure that your session lasts at least 10 minutes.
- Certificates for the Best Presentation Award and all presenters will be sent via email after the conference.

Environment & Equipment Requirements

- A quiet environment with a stable internet connection, proper lighting, and a clean background.
- A computer with internet access and a functioning camera.
- Earphones or a headset.

Conference Recording

- The entire conference will be recorded. If you prefer not to be recorded, please inform us in advance. We will pause the recording during your presentation.
- As the conference will be recorded, we suggest dressing formally and maintaining proper professional behavior.
- The recording will be used solely for conference program and publication requirements. It will not be distributed or shared with any third party, and it must not be used for commercial or illegal purposes.

6-No-Show Policy

Papers unpresented at the conference, without prior written approval by the Conference Technical Program Chair, will be removed from the final conference proceedings before uploading to IEEE Xplore. No refund will be approved to authors of those papers.

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Notice

※ Please wear your delegate badge (name tag) for all the conference activities. Lending your participant card to others is not allowed. 会议期间请佩戴代表证；请勿将代表证转交给他人。

※ Please take good care of your valuables at any time during the conference. The conference organizer does not assume any responsibility for the loss of personal belongings of the participants during conference day. 会议期间请务必随身携带贵重物品，会务组不对任何物品丢失负责。

※ Accommodation is not provided. Delegates are suggested make early reservation. 参会者请提前自行预订酒店房间。

※ Please show the badge and meal coupons when dining. 就餐时请同时出示代表证与餐券。

※ **UTC+8. Beijing Local Time. Please be aware of time difference between this and your region/country. 会议全程以北京时间为准。**

※ **Emergency (Fire Service: 119; Emergency Call: 110; Emergency Medical Services: 120)**

Welcome Message

On behalf of the conference committees, we warmly welcome you to the 2025 the 11th International Conference on Computer and Communications (ICCC), held in Chengdu, China from December 12 to 15, 2025, co-sponsored by Sichuan Institute of Electronics and IEEE, hosted by Youth Talent Work Committee (Sichuan Institute of Electronics), Southwest Jiaotong University, University of Electronic Science and Technology of China, Sichuan University, Chengdu University of Technology, Chengdu University of Information Technology, etc.

ICCC was initiated in 2015, this year marks the 11th ICCC conference. The goal and feature of this conference is to bring together a rich diversity of authors and speakers from university, government and industry around the globe to share their knowledge, experiences and research results, to discuss the practical challenges encountered and the solutions adopted on a wide range of computer and communications research and technologies. It is good that great achievements have been made, ICCC has attracted more than 6000 conference participants in the last 10 years.

The program this year was comprised of 6 keynote lectures, 35 invited speeches, and the paper presentations were grouped into 13 offline oral sessions, 4 poster sessions, 7 special sessions and 22 online sessions.

On behalf of all the conference committees, we feel deeply grateful to all that have contributed to make this event possible: authors who contributed papers, the invited speakers, session chairs and the diligent reviewers. Your high competence, enthusiasm, valuable time and expertise knowledge, enabled us to prepare this conference program smoothly. Special thanks are also extended to the conference administrative committee for their tireless efforts throughout the course of the conference.

We have an exciting program at this conference that will allow members to reflect upon and celebrate our past accomplishments, renew friendships and extend our networks, and jointly explore current and future research directions. We hope that you will have a productive and fun-filled time at this very special conference. We would like to thank all of the sponsoring organizations for providing their generous financial support. Lastly, we would like to thank all of the conference participants for their contributions which are the foundation of this conference. We welcome different opinions from all participants and look forward to the better development of ICCC in the coming years.

Wish you a very successful conference!

Best regards,

Conference Organizing Committee, ICCC 2025

Chengdu

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Dr. Qi Liu, Shanghai Jiao Tong University, China
Dr. Ran Zhang, Beijing University of Posts and Telecommunications, China
Dr. Rui Ma, Henan University, China
Dr. Shenyang Xiao, State Grid Shandong Information & Telecommunication Company, China
Dr. Songting Li, National University of Defense Technology, China
Dr. Songyi Liu, Army Engineering University of PLA, China
Dr. Tong Liu, China Mobile Research Institute, China
Dr. Wasif Feroze, University of Electronic Science and Technology of China, China
Dr. Wei Jiang, German Research Center for Artificial Intelligence (DFKI), Germany
Dr. Weiwei Jiang, Beijing University of Posts and Telecommunications, China
Dr. Wen Fang, Tongji University, China
Dr. Wenji Li, China Academy of Space Technology, China
Dr. Xiang Li, China Mobile Research Institute, China
Dr. Xiaofeng Wang, China Jiliang University, China
Dr. Xiaojuan Sun, Aerospace Information Research Institute, Chinese Academy of Sciences, China
Dr. Xingqi Zhang, University of Alberta, Canada

Dr. Xintao Jiao, South China Normal University, China
Dr. Xinyue Zhang, Assistant Professor, University College Dublin, Ireland
Dr. Xu Sen, Shenyang University of Chemical Technology, Key Laboratory of Industrial Intelligence Technology on Chemical Process of Liaoning Province, China
Dr. Xuming Tong, Faculty of Applied Sciences, Macao Polytechnic University; Hebei North University, China
Dr. Yan Li, University of Nottingham Ningbo China, China
Dr. Yang Sun, Beijing University of Technology, China
Dr. Yangrui Dong, China Unicom, China
Dr. Yanyun Gong, Northwestern Polytechnical University, China
Dr. Yao Zhang, Zhejiang Normal University, China
Dr. Yingyi Yang, China Southern Powergrid Technology Co.,Ltd., China
Dr. Yiwen Xu, Fuzhou University, China
Dr. Yueting Li, Beihang University, China
Dr. Yusi Zhang, The Sixty-third Research Institute, National University of Defense Technology, China
Dr. Yuyu Zhao, Southeast University, China
Dr. Zhaowu Zhan, China Gridcom Co., Ltd., State Grid Corporation of China (SGCC), China
Dr. Zhe Ji, Beijing University of Posts and Telecommunications, China

Zoom Test

Friday, December 12, 2025 (UCT+8 Beijing Time)

Zoom Test for Online Presenters	
10:00-18:00	Zoom A: 819 0941 6703 Zoom B: 889 1235 9993 Zoom C: 872 3009 7202
zoom Download Link: https://zoom.us/download	

To ensure a smooth presentation, all online presenters are required to attend a mandatory technical rehearsal. Please note the following details (所有在线报告人需参加 12 月 12 日的 Zoom 测试环节。每人大约需要 2~3 分钟，完成即可离开。测试前请准备好您的演示文档):

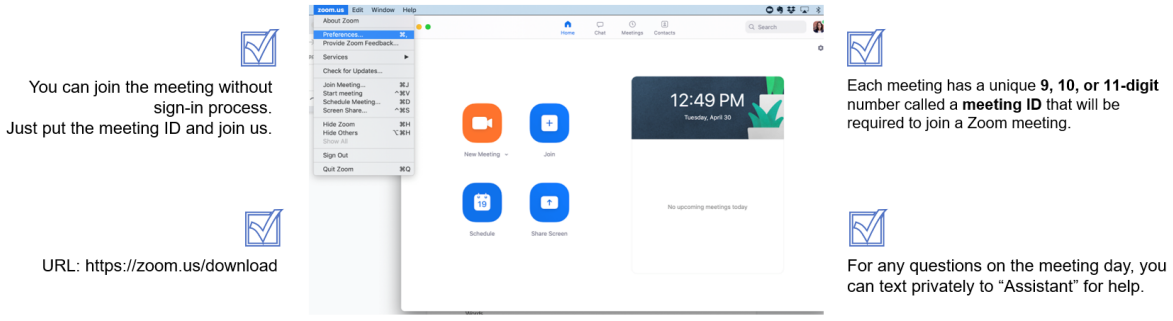
- Date & Time: **December 12, 2025 (Fri.)**. Each presenter is allocated a 2-3-minute time slot.
- Preparation: We recommend installing the Zoom client on your computer prior to the session.
- Joining: No Zoom account is required; you may join as a guest. (Zoom 用户无需注册，输入会议号 meeting ID 即可参会。)
- Procedure: You may leave the meeting immediately after your audio, video, and screen sharing tests are complete.

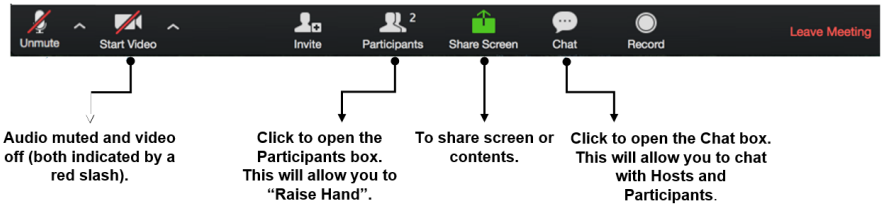
◆Name Setting

- Keynote Speaker: KN-Name
- Invited Speaker: IS-Name
- Committee: Position-Name
- Author: Paper ID-Name
- Delegate: Delegate-Name

◆Useful Links

- Conference Banner
- Zoom Background





Zoom Test Timetable

Zoom ID	Time	Paper ID
Zoom A: 819 0941 6703	10:00-10:40	C1185 C1495 C1334 (C121 C1302) C1458 C1312 C503 C204 C1430
	10:40-11:20	C159 C193 C7003 C111 C1155 C1377 C1471 C7004 C1358 C1417
	11:20-12:00	C1266 C115 C1156 C1157 C117 C1171 C1403 C1512 C1349 C1188
	13:30-14:10	C1440 C108 C1123 C1139 C1174 C1248 C1281 C182 C1147 C1406 C1421
	14:10-14:50	C1152 C1137 C1499 C1275 C1146 C1166 C1209 C1150 C1354
	14:50-15:30	C1323 C1197 C1387 C1115 C1136 C1289 (C147 C206) C130 C1378 C1340
	15:30-16:10	C157 C1162 C168 C1329 C173 C1404 C144 C1217 C511 C1130
	16:10-16:50	C3001 (C1258 C1159) C1521 C1461 C190 C1402 C205 C1181 C1243 C1183
Zoom B: 889 1235 9993	10:00-10:40	C1520 C1257 C1314 C1339 C1270 C1164 C1456 C1425 C210 C1401
	10:40-11:20	C127 C194 C1102 C1347 C1177 C1420 C1482 C1472 C1348
	11:20-12:00	C1285 C1432 C1142 C1111 (C163 C1224) (C1242 C1268) C2004 C191 C1324
	13:30-14:10	C1470 C1231 C151 C186 C1363 C1284 C1452 C1153 C203 C1338
	14:10-14:50	C1335 C1124 C183 C1264 C1389 C1411 C124 C1435 C162 C1343
	14:50-15:30	C104 C118 C1220 C1238 C135 C202 C1341 C1207 C1342 C1397
	15:30-16:10	C1003 C1009 C1154 C1250 C1409 C1412 C1112 C510 C1007 C2003 C1001
	16:10-16:50	C1394 C1204 C207 C1487 C139 C145 C1280 C1004 C1006
Zoom C: 872 3009 7202	10:00-10:40	C507 C1407 C1249 C1129 C172 C1158 C1293 C176 C1515 C1218 C1496
	10:40-11:20	C1462 C512 C513 C152 C1473 C1240 C1477 C1502 C1262 C1509
	11:20-12:00	C150 C169 C185 C1297 C1488 C1117 C1251 C1360 C1279
	13:30-14:10	C1381 C1405 C1271 C1408 C9001 C1203 C1194 C1385 C1416
	14:10-14:50	(C128 C129 C181) C1353 C8011 C198 C1422 C1501 C160 C1467
	14:50-15:30	C141 C211 C1451 C8003 C1211 C8006 C1426 C1230 C1114
	15:30-16:10	C1179 C1236 C1272 C2005 C301 C1384 C158 C175 C1367
	16:10-16:50	C1283 C110 C1109 C164 C208 C1100 C1388 C1483 C1326 C1465

16:50-18:00

Alternative time arrangements are available for participants who are unable to attend at the allocated time.

This applies to all online participants, including but not limited to keynote speakers, invited speakers, session chairs, committee members, and delegates.

Agenda Overview

Friday, December 12, 2025 (UCT+8 Beijing Time) Live Broadcast 直播

Onsite Registration	
10:00-17:00	Venue: Crowne Plaza (Lobby) 成都武侯渝江皇冠假日酒店（大堂）
10:00-18:00	Zoom Test for Online Presenters (See Page 14, 15)

Saturday, December 13, 2025 (UCT+8 Beijing Time)

Keynote Speech	
<Venue: 5F Room No. 5 (5 楼 5 号厅)>	
Chairman: Prof. Haiqing Li. University of Electronic Science and Technology of China, China 李海庆，电子科技大学工程训练中心主任/教授	
9:00-9:30	Welcome Address **Prof. Junjie Wu.** University of Electronic Science and Technology of China, China & Director of Sichuan Institute of Electronics, China <Organizing Committee Chair> 武俊杰，电子科技大学信息与通信工程学院副院长/教授；四川省电子学会理事/信号处理专委会主任委员
	Opening Speech **Prof. Tianrui Li.** Institute of Artificial Intelligence, Southwest Jiaotong University, China <Conference General Co-Chair> 李天瑞，西南交通大学
	Committee Group Photo
Chairman: Assoc. Prof. Chao Ren. Sichuan University, China 任超，四川大学	
9:30-10:10	Keynote Speech I **Prof. Yang Yang.** IEEE Fellow, the Shanghai Center, Hong Kong University of Science and Technology, China 杨旸，香港科技大学（上海中心） <Title: Collaborative Edge Computing for Large AI Models on Wireless Networks>
10:10-10:50	Keynote Speech II **Prof. Yong Zeng.** IEEE Fellow, Southeast University, China 曾勇，东南大学 <Title: Intelligent Channel Knowledge Map with Generative AI for Environment-Aware ISAC>
10:50-11:20	Group Photo & Coffee Break
11:20-12:00	Keynote Speech III **Prof. Shengcai Liao.** IEEE Fellow, United Arab Emirates University, UAE 廖胜才，阿联酋大学 <Title: High-Fidelity Personalized Image and Video Generation>
12:00-13:00	Lunch <1F West Restaurant / 1 楼 维多利亚西餐厅>

Parallel Session <Onsite>		
13:00-15:45		
3F Room No. 3 <3 楼 3 号厅> **Oral Session 1-Ubiquitous Communication Systems and Wireless Communication** Invited Speech: Xiaojun Hei (C516); Nanxi Li (C1309) C1294 C1468 C1295 C1253 C1497 C1344 C178	3F Room Yuerong Hall <3 楼悦蓉厅> **Oral Session 2-Modern Communication Systems and Signal Processing** C1121 C1443 C1469 C1286 C1234 C161 C1369 C136 C1246 C1386 C132	5F Room No. 6 <5 楼 6 号厅> **Oral Session 3-Channel Modeling and Estimation** Invited Speech: Hongwei Wang C1265 C501 C154 C1219 C1500 C1510
5F Room No. 7 <5 楼 7 号厅> **Oral Session 4-Adaptive Network Security Defense and Threat Perception** Invited Speech: Kefeng Guo (C502); Salabat Khan C177 C170 C1200 C140 C1350 C1453 C1400	5F Room No. 8 <5 楼 8 号厅> **Oral Session 5-Joint Resource Allocation and Optimization Management in Communication Networks** Invited Speech: Yaqiong Liu Xiaoqiang Hua C1474 C1390 C1448 C1120 C1202 C1228 C1287	5F Room No. 9 <5 楼 9 号厅> **Poster Session 1-AI Driven Digital Signal Recognition, Estimation and Processing Technology** C1106 C122 C1229 C1278 C1325 C1376 C1463 C1511 C1476 C1184 C1168 C1424 C1513 C1514 C134 C1105 C1119 C1355 C1306 C1104 C1362 C155 **Poster Session 2-Intelligent Image Detection, Recognition and Analysis Methods** C1103 C1110 C1176 C1190 C1260 C1192 C1259 C1359 C1450 C1282 C1291 C1273 C1172 C125 C1434 C1494
15:45-16:00 Coffee Break		
16:00-18:25		
3F Room No. 3 <3 楼 3 号厅> **Oral Session 6-Service-Based Information Networks and Intelligent Access Control Technologies** Invited Speech: Feng Wang; Peiyan Yuan C1269 C1292 C1436 C1466	3F Room Yuerong Hall <3 楼悦蓉厅> **Oral Session 7-Next-Generation Communication Network Technologies and Future Development** Invited Speech: Yingtao Niu; Yan Li C1498 C1383 C1439 C1276 C1145 C1379 C514	5F Room No. 6 <5 楼 6 号厅> **Special Session 2-High Dynamic Communication Technology for Space-Ground Integration Network** Invited Speech: Xin Yang (C2006); Youping Zhao; Jiaxin Zhang C1107 C2001 C1138 C2002 C1454
5F Room No. 7 <5 楼 7 号厅> **Special Session 5-Network Security for Next Generation AI Services** Invited Speech: Danyang Zheng; Chengzong Peng C5001 C195 C1173 C1346 C1503 C5003 C1428	5F Room No. 8 <5 楼 8 号厅> **Special Session 8-Integrated AI and Communication Networks** Invited Speech: Bo Zhang (C1163); Shuai Wang C1380 C156 C1508 C8005 C1319 C189	5F Room No. 9 <5 楼 9 号厅> **Poster Session 3-New Network Architecture, Resource Management and Network Security** C504 C506 C1393 C1132 C1357 C1254 C1178 C8008 C8009 C8010 C1330 C1442 C1336 C187 C1364 C1506 C1479 C1317 C1151 C1290 C1223 C1318 C8001 C1481 **Poster Session 4-AI-enabled Computer Applications & Integrated Communication and Sensing Computing** C1337 C1399 C1165 C8012 C1519 C1373 C1478 C1215 C1232 C8004 C1169 C1327 C1507 C1116 C197 C1118 C1431 C1239 C1274 C1486
18:30-20:00 Banquet <5F Room No. 5 (5 楼 5 号厅)>		
Awarding 2025	Best Reviewer 最佳审稿人奖；Best Special Session Organization 最佳专题组织奖；Best Paper 最佳论文奖；Best Student Paper 最佳学生论文奖；Best Industry Paper 最佳行业文章奖	

Agenda Overview

Sunday, December 14, 2025 (UCT+8 Beijing Time) Live Broadcast 直播

Keynote Speech

<Venue: 5F Room No. 9 (5 楼 9 号厅)>	Zoom A: 819 0941 6703
Chairman: Assoc. Prof. Danyang Zheng, Southwest Jiaotong University, China <Conference Publicity Chair> 郑丹阳，西南交通大学	
9:00-9:40	Keynote Speech IV **Prof. Huanhuan Chen.** IEEE Fellow, University of Science and Technology of China, China 陈欢欢，中国科学技术大学 <Title: Causal Learning and its Applications>
9:40-10:20	Keynote Speech V **Prof. Nikolaos M. Freris.** University of Science and Technology of China, China <Title: SpiRobs: Bioinspired Soft Spiral Robots>
10:20-11:00	Group Photo & Coffee Break
11:00-11:40	Keynote Speech VI **Prof. Xin Luo.** IEEE Fellow, Southwest University, China 罗辛，西南大学 <Title: Nonstandard Tensor Networks>
11:40-13:00	Lunch <2F Chinese Restaurant / 2 楼 悦轩中餐厅>

Parallel Session <Onsite>

13:00-15:55			
3F Room No. 3 <3 楼 3 号厅> **Special Session 7-Millimeter-Wave Radar Technology and Applications** Invited Speech: Peng Chen; Haohao Ren (C1128) C1187 C1180 C1267 C7002 C1261 C7001	3F Room Yuerong Hall <3 楼悦蓉厅> **Oral Session 8-Advanced Electronic Systems and Antenna Design** Invited Speech: Qiaolun Zhang; Gong Chen C1438 C188 C1131 C505 C167 C1457 C1382 C1516 C1161	5F Room No. 6 <5 楼 6 号厅> **Oral Session 9-Target Detection and Pattern Recognition** C1391 C1205 C126 C1213 C1328 C1352 C1288 C1196 C1366	5F Room No. 7 <5 楼 7 号厅> **Oral Session 10-Computer Vision and Intelligent Image Processing** Invited Speech: Yi Zhao C138 C1175 C148 C1320 C1356 C1480 C1475 C1263 C1460
15:55-16:10 Coffee Break			
16:10-18:45			
3F Room No. 3 <3 楼 3 号厅> **Oral Session 11-Image Modelling and Multimedia Application Technologies** C1143 C1333 C1365 C1321 C1195 C165 C1299 C116	3F Room Yuerong Hall <3 楼悦蓉厅> **Oral Session 12-LLM-Based Computer Systems and Software Design** Invited Speech: Lufeng Yuan (C1504) C166 C1189 C1444 C1485 C1322 C1445 C1446 C1433	5F Room No. 6 <5 楼 6 号厅> **Oral Session 13- Next-Generation Artificial Intelligence Technologies and Applications** Invited Speech: Xiangyi Chen C114 C1351 C1313 C1208-A C1182 C1361 C1149	5F Room No. 7 <5 楼 7 号厅> **Special Session 11-Computer-Aided Intelligent Manufacturing and Optimization Control Technology** Invited Speech: Yikang Chen C184 C1518 C1489 C137 C1447 C1459 C1464 C1222 C171
18:30-20:00 Dinner <2F Chinese Restaurant / 2 楼 悦轩中餐厅>			

Agenda Overview

Sunday, December 14, 2025 (UCT+8 Beijing Time)

Parallel Session <Online>		
13:00-16:00		
Zoom A: 819 0941 6703 **Online Session 1-Pattern Recognition** C1185 C1495 C1334 C121 C1458 C1312 C503 C204 C1430	Zoom B: 889 1235 9993 **Online Session 2-Target Detection and Tracking** C159 C193 C7003 C111 C1155 C1377 C1471 C7004 C1358 C1417	Zoom C: 872 3009 7202 **Online Session 3-Digital Image Analysis and Computer Vision** C1266 C115 C1156 C1157 C117 C1171 C1403 C1512 C1349 C1188 C1114
Zoom D: 847 0940 6734 **Online Session 4-Intelligent Detection Models and Defect Detection** C1440 C108 C1123 C1139 C1174 C1248 C1281 C182 C1147 C1406 C1421 C1348	Zoom E: 898 6687 5208 **Online Session 5-Model-Based Prediction Algorithms and Intelligent Computing** C1152 C1137 C1499 C1275 C1146 C1166 C1209 C1150 C1354	
16:00-16:10 Break		
16:10-18:55		
Zoom A: 819 0941 6703 **Online Session 6-Computer Models and Optimization Algorithms** C1323 C1197 C1387 C1115 C1136 C1289 C147 C130 C1378 C1340	Zoom B: 889 1235 9993 **Online Session 7-Multimodal NLP and Intelligent Question Answering Systems** Invited Speech: Isma Hamid C157 C1162 C168 C1329 C173 C1404 C144 C1217 C1130	Zoom C: 872 3009 7202 **Online Session 8-AI for Sciences, Engineering, and Technologies** C3001 C1258 C1521 C1461 C190 C1402 C205 C1181 C1243 C1183 C511
Zoom D: 847 0940 6734 **Online Session 9-Data Science and Knowledge Engineering** C1520 C1257 C1314 C1339 C1270 C1164 C1456 C1425 C210 C1401	Zoom E: 898 6687 5208 **Online Session 10-Text Generation and Information Retrieval Based on Large Language Models** Invited Speech: Yan Li; Farhan Amin C127 C194 C1102 C1347 C206 C1177 C1420	

Agenda Overview

Monday, December 15, 2025 (UCT+8 Beijing Time)

Parallel Session <Online>		
9:00-12:35		
Zoom A: 819 0941 6703 **Online Session 11-Interdisciplinary Computing and Applications Based on Machine Learning** C1285 C1432 C1142 C1111 C163 C1242 C2004 C191 C1324 C1482 C1472	Zoom B: 889 1235 9993 **Online Session 12-Software Design and Testing** C1470 C1231 C151 C186 C1363 C1284 C1452 C1153 C203 C1338	Zoom C: 872 3009 7202 **Online Session 13-Advanced Information Technology and Data Visualization Driven by AI** C1335 C1124 C1159 C183 C1264 C1389 C1411 C124 C1435 C162
Zoom D: 847 0940 6734 **Online Session 14-Mechanical Signal Detection and Fault Diagnosis** C104 C118 C1220 C1238 C135 C202 C1341 C1207 C1342 C1397 C1343	Zoom E: 898 6687 5208 **Special Session 1-Intelligent Cloud-Edge-Terminal Cooperation Computing** Invited Speech: Chao Fang (C1008) C1003 C1009 C1154 C1250 C1409 C1412 C1112 C510 C1007 C2003 C1001 C1004 C1006	
12:35-13:00 Break		
13:00-15:50		
Zoom A: 819 0941 6703 **Online Session 15-System Simulation, Model Analysis, and Test Verification Based on Computer-Aided Design** C1394 C1204 C207 C1487 C139 C145 C1280 C1268 C1224 C1302	Zoom B: 889 1235 9993 **Online Session 16-Advanced Electronics and Information Technology** C507 C1407 C1249 C1129 C172 C1158 C1293 C176 C1515 C1218 C1496	Zoom C: 872 3009 7202 **Online Session 17- Next-Generation Wireless Communication and Protocol Standards** Invited Speech: Weiwei Jiang C1462 C512 C513 C152 C1473 C1240 C1477 C1502 C1262 C1509
Zoom D: 847 0940 6734 **Online Session 18-Satellite Communication and Integrated Space-Air-Ground Networks** C150 C169 C185 C1297 C1488 C1117 C1251 C1360 C1279	Zoom E: 898 6687 5208 **Special Session 9- AI/ML Hardware, Signal Processing and Next-Generation Computing** Invited Speech: Jifei Tang C1381 C1405 C1271 C1408 C9001 C1203 C1194 C1385 C1416	
15:50-16:00 Break		
16:00-18:50		

Zoom A: 819 0941 6703 **Online Session 19-Task Collaboration and Resource Planning in Unmanned Aerial Vehicle Communication and Sensing Systems** Invited Speech: Xin Nie C181 C1353 C8011 C128 C129 C198 C1422 C1501 C160 C1467	Zoom B: 889 1235 9993 **Online Session 20-Intelligent Management and Optimization of Network Resources in Modern Communication Systems** Invited Speech: Maryam Cheraghy C141 C211 C1451 C8003 C1211 C8006 C1426 C1230	Zoom C: 872 3009 7202 **Online Session 21-Channel Modelling and Estimation** C1179 C1236 C1272 C2005 C301 C1384 C158 C175 C1367	Zoom D: 847 0940 6734 **Online Session 22-Network Security and Privacy Protection** Invited Speech: Teodoro F Revano Jr C1283 C110 C1109 C164 C208 C1100 C1388 C1483 C1326 C1465

Keynote Speaker

Saturday, December 13, 2025 (UCT+8 Beijing Time)

9:30-10:10 <Venue: 5F Room No. 5 (5 楼 5 号厅)>

Prof. Yang Yang

IEEE Fellow, the Shanghai Center, Hong Kong University of Science and Technology, China

Speech Title: Collaborative Edge Computing for Large AI Models on Wireless Networks

Abstract: Large AI models have emerged as a crucial element in various intelligent applications at the network edge, such as voice assistants in smart homes and autonomous robotics in smart factories. Computing big AI models, e.g., for personalized fine-tuning and continual serving, poses significant challenges to edge devices due to the inherent conflict between limited computing resources and intensive workload associated with training. Despite the constraints of on-device training, traditional approaches usually resort to aggregating data and sending it to a remote cloud for centralized computation. Nevertheless, this approach is neither sustainable, which strains long-range backhaul transmission and energy-consuming datacenters, nor safely private, which shares users' raw data with remote infrastructures. To address these challenges, we alternatively observe that prevalent edge environments usually contain a diverse collection of trusted edge devices with untapped idle resources, which can be leveraged for edge training acceleration. Motivated by this, we propose to leverage edge collaboration, a novel mechanism that orchestrates a group of trusted edge devices as a resource pool, for expedited, sustainable large AI model computing at the edge. As an initial step, we present a comprehensive framework for building collaborative edge computing systems and analyze in-depth its merits and sustainable scheduling choices following its workflow. To further investigate the impact of its parallelism design, we empirically study a case of four typical parallelisms from the perspective of energy demand with realistic testbeds. Finally, we discuss open challenges for sustainable edge collaboration to point to future directions of edge-centric large AI model computing.

Bio: Dr. Yang Yang is a Professor with the Shanghai Center, Hong Kong University of Science and Technology, China. His research interests include multi-tier computing networks, 5G/6G systems, AIoT technologies, intelligent services and applications, and advanced wireless testbeds. He has published more than 300 papers and filed more than 120 technical patents in these research areas. Yang is a Fellow of the IEEE.

Keynote Speaker

Saturday, December 13, 2025 (UCT+8 Beijing Time)

10:10-10:50 <Venue: 5F Room No. 5 (5 楼 5 号厅)>

Prof. Yong Zeng

IEEE Fellow, Southeast University, China

Speech Title: Intelligent Channel Knowledge Map with Generative AI for Environment-Aware ISAC

Abstract: Existing wireless communication and sensing systems are mainly based on the traditional "environment-unaware" paradigm, which fails to fully exploit the prior information of the local wireless environment, resulting in inefficient environment sensing and channel acquisition. This makes it difficult to meet the future needs with the developing trends such as larger channel dimensions, higher node densities, and more cost-effective hardware. On the other hand, the recently proposed concept of channel knowledge map (CKM) aims to build channel knowledge foundations that learn the intrinsic characteristics of the local wireless environment by fusing massive historical data of all terminals in the area, thereby enables the direct acquisition of environmental priors in advance based on (virtual) terminal location information. This enables the paradigm shift from the traditional environment-unaware to the future environment-aware communication and sensing, offering new ideas for efficient environment sensing and channel acquisition. This talk will introduce the latest research progress in the construction and application of CKM. By discussing the basic principles of CKM, typical cases of communication and sensing based on CKM, the theories and methods of CKM construction based on generative AI, as well as preliminary experimental verification, we will try to answer the five fundamental questions about CKM (2W+3H): What is CKM, why needs CKM, how to build and utilize CKM, and how to build prototypes?

Bio: Yong Zeng, IEEE Fellow, Young Chief Professor of Southeast University and Purple Mountain Laboratory, Nanjing, China. He received the Bachelor of Engineering (First-Class Honours) and Ph.D. degrees from Nanyang Technological University (NTU), Singapore. From 2013 to 2018, he was a Research Fellow and Senior Research Fellow at the National University of Singapore (NUS). From 2018 to 2019, he was a Lecturer at the University of Sydney, Australia. Prof. Zeng was listed as Clarivate Analytics Highly Cited Researcher for 7 consecutive years (2019-2025), AI2000 Most Influential Scholars in the field of Internet of Things for 4 consecutive years (2021-2024), Stanford "Top 2% of Scientists in the World - Lifetime Influence". Prof. Zeng is the recipient of Australia Research Council (ARC) Discovery Early Career Researcher Award (DECRA), IEEE Communications Society Asia-Pacific Outstanding Young Researcher Award, and won 10 international and domestic best paper awards including IEEE Marconi Award (2020 and 2024), Heinrich Hertz Award (2017 and 2020), etc. Prof. Zeng proposed the concept of channel knowledge map (CKM), and his works have been cited by more than 34,000 times. He serves on the editorial board of SCI journals such as IEEE Transactions on Communications, IEEE Transactions on Mobile Computing, and IEEE Communications Letters, and leading guest editor of journals including IEEE ComMag, Wireless ComMag, China Communications, and Science China Information Sciences. Prof. Zeng was elevated to IEEE Fellow "for contributions to unmanned aerial vehicle communications and wireless power transfer".

Keynote Speaker

Saturday, December 13, 2025 (UCT+8 Beijing Time)

11:20-12:00 <Venue: 5F Room No. 5 (5 楼 5 号厅)>

Prof. Shengcai Liao

IEEE Fellow, United Arab Emirates University, UAE

Speech Title: High-Fidelity Personalized Human Image Generation

Abstract: Personalized human image generation aims to synthesize images of a specific individual that match the creator's intent and high standards of realism. Applications include avatar creation, virtual production, digital marketing, fashion try-on, telepresence, education, and assistive design, which has driven rapid growth in research and practice. Despite this momentum, three challenges remain central: instruction following, visual fidelity, and identity consistency. Instruction following means executing complex, compositional prompts with precise control over attributes, actions, and context. Visual fidelity concerns photorealistic detail with robustness to artifacts, occlusions, lighting changes, and unusual poses. Identity consistency requires preserving a subject's likeness across poses, styles, scenes, and broad prompt variations without drift. Building on this framing, we introduce methods that improve controllability for personalized subjects, raise portrait-level realism, and explicitly model and stabilize identity under diverse generations. We also outline practical evaluation protocols, and open challenges for deploying reliable and responsible personalization.

Bio: Dr. Shengcai Liao is an Associate Professor and founding director of the Computer Vision Lab (CVLab) in the College of Information Technology (CIT) in UAEU. He is an IEEE Fellow and IAPR Fellow. He was a Principal Scientist in IIAI, G42 in UAE during 2018-2024, and an Associate Professor in Institute of Automation, Chinese Academy of Sciences (CASIA) from 2014 to 2018. He received B.S. degree in mathematics from Sun Yat-sen University in 2005 and Ph.D. degree from CASIA in 2010. He was a Postdoc at Michigan State University during 2010-2012. He is interested in face and person detection, recognition, analysis, and image and video generation. He has published 100+ papers, with over 23,000 citations and h-index 57. He ranks #905 among 215,114 world-wide AI scientists (Top 0.42%) in 2019 (by Stanford University). His representative work LOMO+XQDA for person re-identification has been cited over 2,600 times and ranks #11 in Most Influential CVPR Papers 2015. He was awarded Best Paper/Best Student Paper in ICB 2006/2007/2015, and CCBR 2016, Best/Outstanding Reviewer in IJCB 2014, CVPR 2019/2021, Great Contribution Award for Beijing 2008 Olympic Games, and Second-Class Award of the China State Science and Technology Progress Award 2019. He served as an Assistant Editor for "Encyclopedia of Biometrics, 2nd Ed.", Guest Associate Editor for IEEE T-BIOM, and Associate Editor for IEEE TPAMI, TIP and TMM. He served as Program Chair for IJCB 2022 and ICIG 2025, and Area Chair for CVPR 2022-2025, ICCV 2023-2025, ICML 2025-2026, NeurIPS 2023-2025, AAAI 2026, ECCV 2024, and WACV 2024-2025.

Keynote Speaker

Sunday, December 14, 2025 (UCT+8 Beijing Time)

9:00-9:40 <Venue: 5F Room No. 9 (5 楼 9 号厅)>

Prof. Huanhuan Chen

IEEE Fellow, University of Science and Technology of China, China

Speech Title: Causal Learning and its Applications

Abstract: In recent years, causal learning has gradually become a research hotspot in artificial intelligence. The talk introduces the content related to causal discovery, causal inference, and decision-making. It will provide an overview of the development progress and the latest technologies in this field. Through application cases in several scenarios, the talk will demonstrate the robustness and interpretability advantages of causal learning.

Bio: Chen Huanhuan, IEEE Fellow, AAIA Fellow, is a national high-level leading talent. He is a professor at the School of Computer Science, University of Science and Technology of China. He has published more than 200 papers in leading international journals such as IEEE Transactions on Neural Networks and Learning Systems, IEEE Transactions on Knowledge and Data Engineering, as well as top international AI conferences including ICML, KDD, and NeurIPS. He has received plenty of awards, including the 2024 Wang Kuancheng Talent Award, the First Prize of the 2022 Anhui Provincial Teaching Achievement Award, the Outstanding Supervisor Award of the Chinese Academy of Sciences, the Prize of the Ministry of Education Natural Science Award, the INNS Young Scientist Award, and the IEEE Transactions on Neural Networks Best Paper Award. His doctoral dissertation received the IEEE Computational Intelligence Society Outstanding Dissertation Award and the BCS Distinguished Dissertation Award in the UK. He has also been recognized with the Outstanding Associate Editor Award from IEEE Transactions on Neural Networks and Learning Systems, along with the TETCI Outstanding Associate Editor Award. As principal investigator, he has led several major projects, including the "Key Technologies for Cross-media Causal Reasoning and Decision-making" project under the Science and Technology Innovation 2030—New Generation Artificial Intelligence Major Project; National Key R&D Program on Basic Theory and Applications of Big Data Knowledge Engineering; a Major Program of the NSFC; an NSFC Key Project; several NSFC General Program projects; an NSFC–Royal Society joint research project; and major provincial projects in Anhui.

Keynote Speaker

Sunday, December 14, 2025 (UCT+8 Beijing Time)

9:40-10:20 <Venue: 5F Room No. 9 (5 楼 9 号厅)>

Prof. Nikolaos M. Freris

University of Science and Technology of China, China

Speech Title: SpiRobs: Bioinspired Soft Spiral Robots

Abstract: SpiRobs morphologically replicate the spiral pa8ern that is ubiquitous in natural organisms (elephant, octopus, chameleon, etc.). They are easy and fast to build across arbitrary scale via 3D prinDng. Cable actuaDon allows for fast and life-like movements. Besides, a single robot can handle a wide variety of objects (in terms of size, shape, and weight). A key to this is a bioinspired grasping strategy from the octopus. Finally, I will also demonstrate a wide range of prototypes, including a miniaturized gripper, a manipulator mounted on a drone, and mulD-robot arrays that can grasp in a tendril-like fashion. A video descripDon is available at: h8ps://www.bilibili.com/video/BV1CDCVYtEoW.

Bio: Nick Freris is Professor in the School of Computer Science at USTC and former Vice Dean of the InternaDonal College (2019-2024). He received the Diploma in Electrical and Computer Engineering from the NaDonal Technical University of Athens (NTUA), Greece, in 2005, and the M.S. degree in Electrical and Computer Engineering, the M.S. degree in MathemaDcs, and the Ph.D. degree in Electrical and Computer Engineering all from the University of Illinois at Urbana-Champaign (UIUC) in 2007, 2008, and 2010, respectively.

His research lies in AIoT: distributed learning, opDmizaDon, data mining, networking, and control, with applicaDons in intelligent transportaDon, power systems, and roboDcs. His research has been sponsored by the Ministry of Science and Technology of China, the Anhui Department of Science and Technology, Tencent, and the NaDonal Science FoundaDon (NSF), USA. He was recognized with the USTC Alumni FoundaDon InnovaDon Scholar Award (twice), the IBM High Value Patent Award, and the IBM InvenDon Achievement Award (twice).

Previously, he was with the faculty of New York University (Abu Dhabi and New York) and, before that, he held senior researcher and postdoctoral researcher posiDons at EPFL and IBM Research in Switzerland. Dr. Freris is a Senior Member of IEEE, ACM, and CCF. Website: h8p://staff.ustc.edu.cn/~nfr/.

Keynote Speaker

Sunday, December 14, 2025 (UCT+8 Beijing Time)

11:00-11:40 <Venue: 5F Room No. 9 (5 楼 9 号厅)>

Prof. Xin Luo

IEEE Fellow, Southwest University, China

Speech Title: Nonstandard Tensor Networks

Abstract: Complex and temporal interactions among numerous nodes are frequently encountered in large-scale big data-related applications such as the recommender systems, social network service systems, and cryptocurrency network transaction systems. Such interactions data can be quantized into a step-N (N⩾3) tensor whose most entries are unknown, i.e., a nonstandard tensor. Despite its highly incompleteness, such a nonstandard tensor contains rich information regarding various desired patterns like the unknown interactions or undetected communities. To discover such patterns, this talk presents the latent factorization of tensors (LFT) models. An LFT model addresses the known data of the target nonstandard tensor in a data density-oriented way and establish highly efficient optimization algorithms for extracting desired latent features from it, thus implementing its representation learning accurately and efficiently. An LFT model has the great potential for industrial usage owing to its high efficiency in both computation and storage.

Bio: Xin Luo (Fellow, IEEE) received the B.S. degree in computer science from the University of Electronic Science and Technology of China, Chengdu, China, in 2005, and the Ph.D. degree in computer science from the Beihang University, Beijing, China, in 2011. He is currently a Professor of Data Science and Computational Intelligence with the College of Computer and Information Science, Southwest University, Chongqing, China. He has authored or coauthored over 400 papers (including over 160 IEEE Transactions/Journal papers) in the areas of Artificial Intelligence and Data Science. Dr. Luo was the recipient of the Outstanding Associate Editor Award from IEEE Access in 2018, IEEE/CAA Journal of Automatica Sinica in 2020, and from IEEE Transactions on Neural Networks and Learning Systems in 2022-2024. He is currently serving as an Associate Editor for IEEE Transactions on Neural Networks and Learning Systems, and IEEE/CAA Journal of Automatica Sinica. His page is https://scholar.google.com/citations?user=hyGlDs4AAAAJ&hl=zh-TW.

Invited Speaker

Saturday, December 13, 2025 (UCT+8 Beijing Time)

3F Room No. 3 <3 楼 3 号厅>

Assoc. Prof. Xiaojun Hei, Huazhong University of Science and Technology, China

Speech Title: Towards Robust 5G MCS Prediction via Physically Consistent Features and Beamforming Fusion

Abstract: The rapid evolution of 5G communication sys-tems has imposed increasingly stringent demands on physical-layer resources, rendering efficient Link Adaptation (LA) essential for sustaining reliable and high-throughput communications. Nevertheless, existing LA algorithms often exhibit degraded performance in dynamic wireless networks and demonstrate limited generalization capability when confronted with deployment conditions that deviate from their training distributions. To address these challenges, we propose a Channel-Aware Beamforming Fusion (CABF) framework to achieve highly reliable and generalizable Modulation and Coding Scheme (MCS) prediction. Our approach extracts physically consistent channel representations, constructs three complementary baseline predictors with distinct inductive biases, and employs a physics-inspired gated fusion strategy to adaptively integrate their outputs. Our simulation results demonstrate that the CABF framework achieves superior robustness against environmental variability and consistently outperforms the conventional benchmarks in diverse scenarios.

Bio: Xiaojun received the B.Eng degrees in Information Engineering from Huazhong University of Science and Technology, Wuhan, P.R. China. He also obtained his MPhil. Degree in Electrical and Electronic Engineering from the Hong Kong University of Science and Technology. Then, he received his Ph.D. degree in the Department of Electronic and Computer Engineering at the Hong Kong University of Science and Technology. Starting from October 2008 till now, he has joined the School of Electronic Information and Communications, Huazhong University of Science and Technology, P.R. China. He is now an associate professor in the School of Electronic Information and Communications, Huazhong University of Science and Technology. Between September 2005 and September 2007, he worked on P2P networking in the Department of Computer and Information Science, Polytechnic University. He is co-author (with Yong Liu and Keith W. Ross) of the best paper in multimedia communications for 2008 by the Multimedia Communications Technical Committee of the IEEE Communications Society. He has been an internationally certified ISW facilitator since Jan. 2021. His current research interests include Artificial Intelligence Enabled Networking, Intelligent Healthcare, Robotic Applications.

3F Room No. 3 <3 楼 3 号厅>

Dr. Nanxi Li, China Telecom Research Institute, China

Speech Title: The Dawn of 6G Standardization: Thinking on Physical Layer Design by Learning from 5G

Abstract: Till now, millions of 5G base stations have been deployed all over the world. We've witnessed the achievements of 5G, while also gained a clear understanding of its challenges. In Aug. 2025, 3GPP initiated the study on 6G standardization, indicating the era of 6G was coming. During this transitional window from 5G to 6G, a thorough assessment of 5G's strengths and shortcomings is essential to leverage these insights for the design of 6G networks.

This paper provides a comprehensive analysis of potential 6G physical layer design based on lessons learned from 5G together with the latest progress in 3GPP. Furthermore, some key research areas for 6G developments are identified from telecom operator's perspective.

Bio: Dr. Nanxi Li, Senior Engineer, China Telecom Research Institute 6G Research Center. He received his Ph.D. degree from Beijing University of Posts and Telecommunications in 2018. He has been with China Telecom Research Institute since then, working on 5G standardization in 3GPP RAN1 and 6G promising techniques including reconfigurable intelligent surface. He is the rapporteur for the 3GPP Rel-18 further NR coverage enhancements work item. He has submitted 200 technical papers to 3GPP, invented/co-invented about 130 filed/granted Chinese patents, published 20 academic papers and co-authored 1 book.

3F Room No. 3 <3 楼 3 号厅>

Research Fellow, Feng Wang, Singapore University of Technology and Design (SUTD), Singapore

Speech Title: Breaking Snapshot Barrier: Graph-Based Learning for Reliable NTN Mobility Management

Abstract: Non-terrestrial networks (NTNs), especially large-scale multi-layer satellite constellations, pose fundamental challenges for mobility management due to their dynamic multi-coverage and frequent handovers (HOs). Conventional snapshot-based mobility methods make slot-by-slot HO and link-switching decisions, which often results in locally optimal but globally suboptimal HO trajectories, leading to unstable satellite services and degraded user experience. To overcome these limitations, we propose a graph-based mobility learning framework that models all feasible HO opportunities as a graph, enabling global HO planning rather than repeated local decisions. To further enhance decision quality, we employ a modified graph attention network to assign adaptive edge weights in graph, prioritizing HO options with higher link capacity and longer service duration, facilitating globally optimal HO sequence planning. This talk will introduce the key characteristics of NTNs, mobility challenges, and research approaches integrating AI.

Bio: Feng Wang received the B.S. and Ph.D. degrees from University of Electronic Science and Technology of China (UESTC) in 2016 and 2022, respectively. He is currently a Research Fellow with Information Systems Technology and Design Pillar at the Singapore University of Technology and Design (SUTD), Singapore. His research interests include non-terrestrial networking (NTN), satellite mobility management, and NTN service orchestration. He was a keynote speaker at SIMUtools 2020 and a tutorial speaker at ICCT 2024, 2025. He received the Best Paper Award at SIMUtools 2019. He has orgnized multiple NTN-related symposia and workshops at international conferences. He served as a Guest Editor of Electronics and is currently a member of Youth Editorial Board of Journal of Information and Intelligence (JII).

3F Room No. 3 <3 楼 3 号厅>

Prof. Peiyan Yuan, Henan Normal University, China

Speech Title: Edge Intelligent Application Systems

Abstract: Deploying deep learning models on edge servers can effectively alleviate the pressure on cloud data centers in computing, communication, and energy, etc. We attempt to extend this deployment scheme from edge servers to mobile terminals to further save spectrum resources, utilize communication resources, and provide intelligent applications. Specifically, a lightweight federated learning model is first proposed through the cooperative training

between edge servers and mobile terminals. The trained model is then migrated to mobile terminals. Finally, image identification is considered to verify the effectiveness and efficiency of our proposed model.

Bio: Peiyan Yuan is a professor of Computer Science, a PhD supervisor, and the dean of computer and information engineering school at the Henan Normal University. He was elected as the Pingyuan Scholar in 2022 and the Young Scholar of Henan Province in 2019. He is the distinguished member of CCF, the senior memeber of IEEE, and the associate editor of EURASIP Journal on Wireless Communications and Networking, and Journal of Big Data, respectively. His research interests include future networks and distributed systems, and he authored or coauthored more than senventy papers and two books in these fields. He received three Best Paper Awards. Three projects are granted by the NSFC and more than ten projects are granted by the Department of Education, Department of Science and Technology of Henan Province.

3F Room Yuerong Hall <3 楼悦蓉厅>

Assoc. Prof. Yingtao Niu, National University of Defense Technology, China

Speech Title: Coping with Unknown Jamming: Reflections on Intelligent Anti-Jamming Communications

Abstract: Most existing communication anti-jamming methods are designed based on prior knowledge or existing samples of jamming signals. With the advancement of artificial intelligence technology, malicious jammers have become increasingly intelligent, exposing wireless communication systems to dynamic and unknown interference. This makes it difficult to design targeted anti-jamming strategies due to the lack of prior knowledge or existing jamming samples. To address this, we employ machine learning and in-domain knowledge reuse to achieve precise anti-unknown jamming, utilize stability control methods to achieve broad-spectrum anti-unknown jamming, and adopt an immune vaccine-inspired approach to achieve efficient anti-unknown jamming.

Bio: Yingtao Niu received the Ph.D. degree from the Institute of Communication Engineering, PLA University of Science and Technology, China, in 2008. He is currently an Associate Professor at National University of Defense Technology (NUDT), Nanjing, China. He has authored more than 100 journal and conference papers. His main research interests include signal processing in wireless communication, cognitive radio theory and techniques, with particular emphasis on algorithms of anti-jamming communication and intelligent algorithm in wireless systems.

3F Room Yuerong Hall <3 楼悦蓉厅>

Dr. Yan Li, University of Electronic Science and Technology of China, Chengdu, China

Speech Title: Unlimited Sampling based Integrated Sensing and Communication system

Abstract: In millimeter-wave Integrated Sensing and Communication (ISAC) systems, near-field multipath effects and strong scatterers cause the amplitude dynamic range of sensing echoes and communication signals to easily exceed 100 dB. However, traditional communication receivers typically support only around 40 dB, leading to ADC saturation and the submersion of weak target signals in quantization noise. Conventional solutions like clipping, automatic gain control (AGC), or multi-stage ADC architectures offer either limited recovery capabilities or incur prohibitively high costs and noise penalties. The "unlimited sampling" framework proposed by MIT in 2017 addresses this by performing modulo folding (residue acquisition) on out-of-range samples in the analog front-end. This compresses all signals back into the ADC's linear range, enabling distortion-free reconstruction of the original waveform through oversampling and higher-

order finite differences—achieving both low complexity and low cost. Recent years have witnessed rapid advancements in folding ADC hardware, robust reconstruction algorithms, and non-ideality compensation techniques, with feasibility already validated in medical imaging and radar applications. To meet the extreme dynamic range demands of millimeter-wave ISAC, this research systematically investigates: Hardware implementation of modulo-folding ADCs and Joint communication-radar processing in the folded domain.The work aims to establish solid theoretical and prototyping foundations for next-generation, low-cost, wide-dynamic-range ISAC terminals, demonstrating significant innovation and timeliness.

Bio: Li Yan, Lecturer. She earned her Ph.D. from the University of Electronic Science and Technology of China, during which she was jointly Ph.D at the University of Alberta in Canada. After obtaining her doctorate, she worked for seven years at Huawei Technologies Co., Ltd., focusing on millimeter-wave-related algorithms and hardware design. She completed the fault tolerance theory and tape-out of an independently designed chip end-to-end, which was published in the journal JSSC for circuit design. In early 2024, she joined the University of Electronic Science and Technology of China as a lecturer, primarily engaged in teaching and research related to millimeter-wave sensing and communication integration, as well as low-power high-reliability hardware architecture. She has participated in or led multiple enterprise projects on sensing and communication integration, including those by China Mobile and Datang, as well as national key projects. Under her guidance, students won the second prize in the National Graduate Electronic Design Competition Final in 2024. She has published over 20 academic papers and applied for/invented more than 6 patents.

5F Room No. 6 <5 楼 6 号厅>

Assoc. Prof. Hongwei Wang, University of Electronic Science and Technology of China, China

Speech Title: Near/Far-Field Channel Estimation For Millimeter wave/Terahertz Systems With ELAAs: A Block-Sparsity-Aware Approach

Abstract: Millimeter wave/Terahertz (mmWave/THz) communication with extremely large-scale antenna arrays (ELAAs) offers a promising solution to meet the escalating demand for high data rates in next-generation communications. A large array aperture, along with the ever-increasing carrier frequency over the mmWave/THz bands, leads to a large Rayleigh distance. As a result, the traditional planar-wave assumption may not hold valid for mmWave/THz systems featuring ELAAs. In this paper, we consider the problem of hybrid near/far-field channel estimation by taking spherical wave propagation into account. By analyzing the coherence properties of any two near-field steering vectors, we prove that the hybrid near/far-field channel admits a block-sparse representation on a specially designed unitary matrix. Specifically, the percentage of nonzero elements of such a block-sparse representation is in the order of $1/\sqrt{N}$, which tends to zero as the number of antennas, N, grows. Such a block-sparse representation allows to convert channel estimation into a block-sparse signal recovery problem. Simulation results are provided to verify our theoretical results and illustrate the performance of the proposed channel estimation approach in comparison with existing state-of-the-art methods.

Bio: Hongwei Wang received the B.S. and Ph.D. degrees from Northwestern Polytechnical University, Xi'an, China, in 2013 and 2019, respectively. From December 2019 to July 2024, he was a Post-Doctoral Researcher with the University of Electronic Science and Technology of China, where he is currently an Associate Professor. His research interests include statistical signal processing, compressed sensing and sparse theory, and mmWave/THz wireless communications.

5F Room No. 6 <5 楼 6 号厅>

Prof. Xin Yang, Northwestern Polytechnical University, China

Speech Title: AFDM-Based Integrated Sensing and Communication System with Composite Pilot-Aided Channel Weighted Estimation

Abstract: In the current Affine Frequency Division Multi-plexing (AFDM)-based Integrated Sensing and Communication (ISAC) system, the sensing pilot and channel estimation pilot share spectrum resources, leading to excessive spectrum over-head. To effectively address this issue, this paper proposes a new composite pilot scheme by introducing sensing frames and data frames in the Discrete Affine Fourier Transform (DAFT) domain, with pilots overlaid in the data frame, thereby minimizing channel estimation errors. To further optimize this scheme, we propose the sensing-aided weighted channel estimation (SAWCE) scheme, which improves channel estimation and data detection performance by flexibly selecting parameters for different sce-narios. Simulation results show that the SAWCE scheme can achieve flexible switching between the 'static-low complexity high accuracy' and 'dynamic-real-time tracking' modes through different parameter configurations, validating the effectiveness and advantages of the scheme.

Bio: Yang Xin received his B. Eng. and M. Eng., in communications engineering from Xidian University in 2011 and 2014. Then he received Ph.D. degrees in communications engineering from Northwestern Polytechnical University in 2018. Currently he is a professor majored in information and communication engineering of Northwestern Polytechnical University. His research interests include wireless communication networks and protocol design.

5F Room No. 6 <5 楼 6 号厅>

Prof. Youping Zhao, Beijing Jiaotong University, China

Speech Title: Blockchain-Enabled Three-Dimensional Radio Environment Map (REM) for Space-Air-Ground Integrated Network Spectrum Assessment

Abstract: The Space-Air-Ground Integrated Network (SAGIN) extends communication coverage from traditional two-dimensional (2D) topologies to three-dimensional (3D) space, introducing complex dynamics in electromagnetic signal propagation that challenge spectrum situational awareness. Conventional 2D radio environment maps (REMs) are inadequate, necessitating 3D-REMs to visualize spatial spectrum distributions. SAGIN's heterogeneous architecture poses two key challenges: fragmented multi-domain environmental data requiring secure and efficient maintenance, and multi-dimensional network integration demanding unified resource efficiency evaluation. This talk presents a blockchain-based framework for 3D-REM construction and spectrum situational awareness. A hierarchical blockchain architecture is designed, integrating ground-layer high-efficiency consensus, UAV-layer DPoS-based dynamic election, and satellite-layer PBFT for long-term spectrum benchmarks, ensuring data integrity and security. A MATLAB-based simulation platform is employed to model the radio propagation scenarios. The proposed approach enhances the accuracy of spectrum situational analysis and provides a practical basis for efficient resource allocation.

Bio: Youping Zhao received the B.S. and M.S. degrees from Tsinghua University, Beijing, China, in 1994 and 1996, respectively, and the Ph.D. degree from Virginia Tech, Blacksburg, Virginia, USA, in 2007. He is currently a Professor with Beijing Jiaotong University, Beijing. His research interests include blockchain-based spectrum management for space-air-ground integrated networks, channel characterization, radio environment map (REM)-enabled cognitive radio

and intelligent communications for the next-generation wireless communications.

5F Room No. 6 <5 楼 6 号厅>

Assoc. Prof. Jiaxin Zhang, Beijing University of Posts and Telecommunications, China

Speech Title: Mega Constellation Network Routing: Exploring Efficient and Reliable Inter-Satellite Communication Paths

Abstract: With the development and deployment of low Earth orbit (LEO) satellite constellations, satellite networks are evolving toward large-scale and heterogeneous architectures, gradually forming the mega-constellation that integrate multiple satellite networks of different orbital altitudes, scales, and functional domains. Compared with terrestrial networks and small-scale satellite networks, the mega-constellation feature a much larger number of satellites, more frequent and unpredictable topological changes, and a complex service environment where different applications have varying demands on network capabilities. Consequently, typical terrestrial routing methods and small-scale satellite routing approaches are not applicable to the mega-constellation. This speech will delve into the challenges of mega-constellation routing and explore potential solutions from four dimensions: low-overhead routing, elastic routing, resilient routing, and cross domain routing. Through the exploration of these issues, this speech will outline a clear path toward the efficient, reliable, and adaptive routing concepts required for the next-generation mega-constellation.

Bio: Dr. Jiaxin Zhang received the B.S. (2012) and Ph.D. (2017) degrees from Beijing University of Posts and Telecommunications (BUPT), Beijing, China. He is currently an Associate Professor with the School of Information and Communication Engineering, BUPT. His research interests include 6G networks, integrated satellite–terrestrial networks, non-terrestrial networks (NTN), and mobile edge computing. Dr. Zhang received the IEEE WCSP 10-year Anniversary Excellent Paper Award (2009–2019) and the IEEE Trust Com Outstanding task Award 2021.

5F Room No. 7 <5 楼 7 号厅>

Assoc. Prof. Kefeng Guo, Nanjing University of Aeronautics and Astronautics, China

Speech Title: Reliable Covert Communication for NOMA-based Satellite Networks Under Interference Constraint

Abstract: In this paper, we study the reliable covert communication for the non-orthogonal multiple access (NOMA)-based satellite networks with interference constraint. Firstly, we establish a reliable covert communication system, which consists of a satellite, two NOMA users, aWillie, and an interference node, where one of the users is equipped with a full-duplex receiver. Secondly, based on the considered system model, we derive the closed-form expression for the detection error probability (DEP) and the covert outage probability (COP). Particularly, an optimization is proposed to enhance the covert performance of the considered system. Finally, some representative Monte Carlo simulations are given to confirm the rightness of the theoretical analysis.

Bio: Kefeng Guo received his B.S. degree from Beijing Institute of Technology, Beijing, China in 2012, and the Ph.D. degree in Army Engineering University, Nanjing, China in 2018. He is an associate professor in the College of Electronic and Information Engineering, Nanjing University of Aeronautics and Astronautics. He has authored or coauthored nearly 100 research papers in international journals and conferences. His research interests focus on cooperative relay networks, MIMO communications systems, multiuser communication systems, satellite communication, hardware

impairments, cognitive radio, NOMA technology and physical layer security. He was a recipient of exemplary Reviewer for IEEE Transactions on Communications in 2022. He was the recipient of the Outstanding Ph.D. Thesis Award of Chinese Institute of Command and Control in 2020. He also was the recipient of the Excellent Ph.D. Thesis Award of Jiangsu Province, China in 2020. He was the recipient of the Best Paper Award of WiSATS 2024. He was listed in the World's Top 2% Scientists identified by Stanford University in 2022-2024. He also serves as an Editor on the Editorial Board for the EURASIP Journal on Wireless Communications and Networking and IEEE Open Journal of the Communications Society. Dr. Guo has been the TPC member of many IEEE sponsored conferences, such as IEEE ICC, IEEE GLOBECOM and IEEE WCNC.

5F Room No. 7 <5 楼 7 号厅>

Assoc. Prof. Salabat Khan, Qilu Institute of Technology, Jinan, China

Speech Title: Pseudonym Authentication and Revocation in Vehicular Public Key Infrastructure for Secure Cooperative Intelligent Transportation System

Abstract: Cooperative Intelligent Transportation Systems (C-ITS) is envisioned to revolutionize the future of vehicular networks through enabling technologies, which allow vehicles to communicate and cooperate seamlessly with one another and with infrastructure. This transformation aims to improve traffic efficiency, enhance safety, and support the development of autonomous driving technologies. However, connecting vehicles to communication technologies exposes them to cyberattacks. Thus, the security and privacy of these systems remain critical concerns. Therefore, secure and privacy-preserving communications within C-ITS are a demanding requirement. To fulfill this demand, pseudonym authentication has emerged as a highly effective solution. In this approach, vehicles use temporary pseudonyms for secure identification, rather than their real identities, ensuring privacy while allowing for the validation of messages. This mechanism is underpinned by a Vehicular Public Key Infrastructure (VPKI), which facilitates the management of pseudonyms and digital certificates issued by trusted authorities. While pseudonymization helps protect user privacy, it introduces significant challenges in revocation. The revocation of compromised or misbehaving vehicles is essential to maintaining the security and integrity of the system. However, traditional methods of revocation, such as Certificate Revocation Lists (CRLs) or Online Certificate Status Protocol (OCSP), face scalability issues when applied to large, dynamic vehicular networks. Efficient revocation mechanisms must be developed to strike a balance between the need for real-time updates and the system's overall performance. This talk explores the concept of pseudonym authentication and revocation mechanisms in the context of C-ITS, highlighting the complexities of maintaining both privacy and security in large-scale vehicular networks. Key topics will include the use of VPKI for pseudonym management, various cryptographic techniques for secure communication, and the latest advancements in revocation protocols. Additionally, we will discuss the integration of blockchain and other emerging technologies to enhance security, improve system scalability, and streamline the revocation process.

Bio: Salabat Khan received a Ph.D. in Computer Science and Technology from the Beijing Institute of Technology, Beijing, China. He was a Postdoctoral Fellow (2020-2022) with the College of Computer Science and Software Engineering, Shenzhen University, China. Afterward, Dr. Khan worked as an Associate Researcher (Associate Professor Research) with the College of Computer Science and Software Engineering. He is an Associate Professor in the School of Computer and Information Engineering, Qilu Institute of Technology, China. He has published over 60 research articles in various highly reputable journals, including IEEE Communications Surveys and Tutorials, IEEE Transactions on Intelligent Transportation Systems, IEEE Transactions on Vehicular Technology, and IEEE Transactions on Mobile Computing. His research interests include security and privacy, VPKI, PKIX, cryptographic algorithms, blockchain, and distributed ledger technologies.

5F Room No. 7 <5 楼 7 号厅>

Assoc. Prof. Danyang Zheng, Southwest Jiaotong University, China

Speech Title: Ubiquitous LLM Inference as a Service for Edge Networks

Abstract: Large Language Models (LLMs) are rapidly evolving from cloud-centric services to ubiquitous intelligence enablers for autonomous devices such as robots and unmanned vehicles. Deploying LLM inference in these dynamic, latency-critical environments raises fundamental challenges in connectivity, resource allocation, model partitioning, and service orchestration. The speaker will present key techniques including adaptive expert routing, context caching, and collaborative inference pipelines that balance latency, energy, and reliability. By bridging AI model serving, service computing, and autonomous systems, this speach lays the groundwork for scalable, dependable, and context-aware LLM intelligence "anywhere, anytime."

Bio: Danyang Zheng received the B.S. degree in computer science from the University of Electronic Science and Technology of China, Chengdu, China, in 2016, and the Ph.D. degree in computer science from the Georgia State University (fully sponsored by China Scholarship Council for four years), Atlanta, GA, USA, in 2021. He is currently an Associate Professor at Southwest Jiaotong University, China. His research interests include network function virtualization, network reliability and security, in-network computation, and AI on Networks. He is on the editorial board of Big Data Mining and Analytics. He was/is the Publicity chair of WCCCT 2025-2026, ICCC 2024-2025, the Track chair of WCCCT 2024, ICCC 2025, and IEEE ICNC 2025-2026, and served as TPC member of IPCCC 2025, WCCCT 2023-2025, ICCC 2021-2025, IEEE ICTC 2023, IEEE VTC 2023, and IEEE ICCT 2023. He is also serving as the Skill Competition Manager (SCM) for Software Testing in the coming WorldSkill Shanghai 2026.

5F Room No. 7 <5 楼 7 号厅>

Assoc. Prof. Chengzong Peng, Chengdu University of Information Technology, China

Speech Title: Security-aware Sub-chain Embedding and Protection in Edge Networks

Abstract: Mixture of experts (MoE) has shown great potential in enhancing large language models, such as DeepSeek.

In MoE, expert networks collaboratively process tokens routed by the gating network, enabling advanced capabilities such as semantic understanding, computational reasoning, and code generation.

To address security threats such as DDoS in these dynamic environments, it is essential to implement tailored backup measures for these experts. However, traditional backup methods often lead to inefficiencies and excessive resource consumption.

To overcome these challenges, we propose a novel approach for backing up experts in MoE.

We formally define and mathematically model a new problem, termed the security-aware off-site pairwise protection (SOPP) problem, and prove its NP-hardness.

To solve this problem, we develop three novel techniques of latency-aware MoE construction (LMC) to reduce backup latency, partitioned backup selection (PBS) to trade off security levels and resource consumption, as well as pairwise selective identifier (PSI) to determine the appropriate backup pairwise nodes.

On the basis of these techniques, we propose an efficient heuristic algorithm called the off-site distributed pairwise nodes protection (OD-PNP), providing theoretical performance guarantees.

Through extensive simulations and analyses, we demonstrate that our proposed algorithm outperforms state-of-the-art methods in terms of both protection efficiency and resource consumption.

Bio: Chengzong Peng, Ph.D., Associate professor, IEEE member, CCF member. His research focuses on network reliability, cyberspace security, and artificial intelligence. He has published over 30 SCI/EI papers, including IEEE INFOCOM, IEEE TNSM, IEEE IoTJ, and Computer Networks. He is currently leading/working on multiple national and provincial-level scientific research projects, and horizontal research projects. He is serving as the TPC of ICNC 2025, and has served as the Session Chair of WCCCT 2024, and the Talk Chair of ACM TURC 2024. He has also served as a reviewer for multiple well-known international academic journals and conferences, such as Big Data Mining and Analytics, Expert System with Applications, and Computer Network.

5F Room No. 8 <5 楼 8 号厅>

Assoc. Prof. Yaqiong Liu, Beijing University of Posts and Telecommunications, China

Speech Title: Communication-Sensing-Computation Integration Oriented Joint Optimization of Latency and Energy Consumption in Internet of Vehicles

Abstract: Aiming to facilitate to realize the goal of becoming a country with strong transportation network and carbon peaking and carbon neutrality, it is required to develop techniques for realizing low-latency and low-energy consumption communication-sensing-computation integration in Internet of Vehicles (IoV). However, the traditional IoV architecture and the relatively high latency and energy consumption in most current task scenarios in IoV, cannot meet the requirements of the communication-sensing-computation integration in IoV. Therefore, we conduct research on low-latency and low-energy consumption communication-sensing-computation integration techniques in IoV. To meet the low-latency and low-energy consumption requirement of the communication-sensing-computation integration in IoV, we embrace the scientific problem of the joint optimization mechanism of the latency and energy consumption for the vehicle-vehicle/vehicle-road-cloud cooperation, design the communication-sensing-computation integration architecture in IoV based

on edge intelligence, propose the joint optimization mechanism of single-agent latency and energy consumption from the aspect of vehicle-road-cloud cooperation, propose the joint optimization mechanism of multi-agent latency and energy consumption from the aspect of vehicle-vehicle/vehicle-road-cloud mixed cooperation, with the purpose of jointly reducing the latency and energy consumption of the vehicle-vehicle/vehicle-road-cloud cooperation and improving the performance and energy efficiency of the communication-sensing-computation integration in IoV.

The outcomes can provide valuable theoretic and technical guidance for the related research and industrial applications in IoV.

Bio: Yaqiong Liu is currently an Associate Professor with School of Information and Communication Engineering, Beijing University of Posts and Telecommunications. She received her PhD's degree from Nanyang Technological University, Singapore in 2016. Her research interests include internet of vehicles, artificial intelligence, and spatial information communication. She is an IEEE Senior Member, Member of Internet of Vehicle Professional Committee in China Institute of Communications, Senior Member of China Institute of Communications, TPC Member of IEEE ICCC 2018/2019/2020/2021/2022 and BigData 2024/2025, and serves as a reviewer for multiple leading journals (e.g., IEEE Trans. Commun., IEEE Trans. Wirel. Commun., IEEE Trans. Netw. Serv. Manag., IEEE Trans. Veh. Technol., IEEE Wireless Commun., IEEE Commun. Mag., IEEE Internet of Things J., etc.). She has won tens of awards, such as the First Prize in National University Electronic-Information Young Teacher Teaching Sills Competition, and the First Prize of the Science and Technology Award of China Communication Society, etc.

5F Room No. 8 <5 楼 8 号厅>

Assoc. Prof. Bo Zhang, Tianjin Normal University, China

Speech Title: Secure Positional Modulation for Metasurfaces via Genetic Algorithm with Discrete Phase and Power Constraints

Abstract: Positional Modulation (PM), an advanced form of Directional Modulation (DM), enables secure communication by ensuring correct signal demodulation only at specific locations while scrambling constellations elsewhere. While existing PM research predominantly focuses on single-user scenarios, prac-tical wireless systems must serve multiple users simultaneously, introducing the critical challenge of multi-user interference management. This paper extends PM to multi-user systems by proposing a novel framework that simultaneously addresses discrete phase constraints, transmitter power limitations, and multi-user interference. We formulate the multi-user PM design as a multi-objective optimization problem that incorporates symbol fidelity for multiple legitimate users, interference sup-pression among users, and security against eavesdroppers. To solve this NP-hard problem, we develop an enhanced Genetic Algorithm (GA)-based hybrid optimization strategy. The pro-posed GA intelligently searches the discrete phase space of the metasurface, while for each candidate phase configuration, the corresponding power-constrained multi-user beamforming subproblem is formulated as a convex Quadratically Constrained Quadratic Program (QCQP) and solved to global optimality. Simulation results demonstrate that our approach effectively achieves precise multi-user PM, creating significant SNR gaps of over 7 dB between legitimate users and eavesdroppers while maintaining multi-user interference ratios below −15 dB. The proposed algorithm demonstrates robust performance in multi-user environments, converging to high-quality solutions typically within 15 generations and achieving substantial system sum rate improvements compared to single-user PM extensions.

Bio: Bo Zhang, Ph.D., is an Associate Professor and the Vice Dean of the College of Electronic and Communication Engineering / College of Artificial Intelligence at Tianjin Normal University. He received his Ph.D. from The University of Sheffield, UK, in 2018. As a Master's supervisor, his primary research interests include array signal processing, integrated sensing and communication (ISAC) design, and Simultaneous Wireless Information and Power Transfer (SWIPT).

5F Room No. 8 <5 楼 8 号厅>

Asst. Prof. Shuai Wang, University of Electronic Science and Technology of China, China

Speech Title: Beyond ADMM: A Unified Client-Variance-Reduced Adaptive Federated Learning Framework

Abstract: As a novel distributed learning paradigm, federated learning (FL) faces serious challenges in dealing with massive clients with heterogeneous data distribution and computation and communication resources. Various client-variance-reduction schemes and client sampling strategies have been respectively introduced to improve the robustness of FL. Among others, primal-dual algorithms such as the alternating direction of method multipliers (ADMM) have been found being resilient to data distribution and outperform most of the primal-only FL algorithms. However, the reason behind remains a mystery still. In this paper, we firstly reveal the fact that the federated ADMM is essentially a client-variance-reduced algorithm. While this explains the inherent robustness of federated ADMM, the vanilla version of it lacks the ability to be adaptive to the degree of client heterogeneity. Besides, the global model at the server under client sampling is biased which slows down the practical convergence. To go beyond ADMM, we propose a novel primal-dual FL algorithm, termed FedVRA, that allows one to adaptively control the variance-reduction level and biasness of the global

model. In addition, FedVRA unifies several representative FL algorithms in the sense that they are either special instances of FedVRA or are close to it. Extensions of FedVRA to semi/un-supervised learning are also presented. Experiments based on (semi-) supervised image classification tasks demonstrate superiority of FedVRA over the existing schemes in learning scenarios with massive heterogeneous clients and client sampling.

Bio: Shuai Wang received the PhD degree from the School of Science and Engineering, The Chinese University of Hong Kong, Shenzhen, China, in 2021. He is currently an assistant professor at the University of Electronic Science and Technology of China. Before that, he was a postdoctoral research fellow with the Information Systems Technology and Design Pillar, Singapore University of Technology and Design, Singapore. His current primary research interests include optimization algorithms for signal processing, machine learning and communication systems, distributed optimization and federated learning (FL), data security and privacy protection in distributed systems, integrated sensing and communication (ISAC), etc. He has published more than 30 academic papers and serves as the Youth Editorial Board Member of two journals, and the session chair of ICCT 2025.

5F Room No. 8 <5 楼 8 号厅>

Assoc. Prof. Xiaoqiang Hua, National University of Defense Technology, China

Speech Title: Matrix Information Geometry Detector: From Shallow to Deep Manifold

Abstract: The theory of matrix information geometry originated from mathematical research in information science, but has received widespread attention in different fields. Many problems in probability theory, information theory, and statistics can be transformed into Riemannian geometry or dual geometry problems on Riemannian manifolds from the perspective of information geometry. Therefore, matrix information geometry has solved numerous problems related to information processing from a geometric perspective and made significant research progress in the fields of radar/sonar/communication signal processing. This report introduces matrix information geometric detection methods, the basic principles of deep manifold network detection methods, and their applications in nonhomogeneous clutter.

Bio: Xiaoqiang Hua is an associate professor of the National University of Defense Technology. He received the PhD degrees in information and communication engineering from National University of Defense Technology, Changsha, China, in 2018. His research interests lie in the areas of information geometry, statistical signal processing, radar target detection.

Invited Speaker

Sunday, December 14, 2025 (UCT+8 Beijing Time)

3F Room No. 3 <3 楼 3 号厅>

Assoc. Prof. Peng Chen, Southeast University, China

Speech Title: An Efficient Covariance Matrix Reconstruction Method for Robust Adaptive Beamforming

Abstract: The computational complexity of traditional adaptive beamforming algorithms is relatively large, and due to model mismatch errors and the presence of the desired signal in the received data all the time, the performance of the algorithm decreases significantly. An interference and noise covariance matrix reconstruction method based on the removal of the desired signal and the Gauss-Legendre quadrature technique (URGLQ) is proposed. Different from the existing covariance matrix reconstruction methods, a projection matrix is constructed to remove the desired information in the received signal, improving the reconstruction accuracy of the covariance matrix. At the same time, considering that most matrix reconstruction algorithms require integration operations, which leads to relatively large algorithm complexity, we propose a method based on Gauss-Legendre quadrature to approximate the integration operation while maintaining accuracy. In addition, in order to improve the robustness of the beamformer, we construct a steering vector correction function based on the criterion of the maximum beamformer output power to reduce the mismatch error of the desired signal steering vector. Simulation and measured results show that the performance of the proposed beamforming algorithm is superior to existing methods and is closer to the optimal beamformer in different scenarios.

Bio: Peng Chen (Senior Member, IEEE) was born in Jiangsu, China, in 1989. He received the B.E. and Ph.D. degrees from the School of Information Science and Engineering, Southeast University, Nanjing, China, in 2011 and 2017 respectively. From March 2015 to April 2016, he was a Visiting Scholar with the Department of Electrical Engineering, Columbia University, New York, NY, USA. He is currently an Associate Professor with the State Key Laboratory of Millimeter Waves, Southeast University. His research interests include target localization, super-resolution reconstruction, and array signal processing. He is a Jiangsu Province Outstanding Young Scientist. He has served as an IEEE ICCC Session Chair, and won the Best Presentation Award in 2022 (IEEE ICCC). He was invited as a keynote speaker at the IEEE ICET in 2022. He was recognized as an exemplary reviewer for IEEE WCL in 2021, and won the Best Paper Award at IEEE ICCCCEE in 2017.

3F Room No. 3 <3 楼 3 号厅>

Assoc. Prof. Haohao Ren, University of Electronic Science and Technology of China, China

Speech Title: Semi-supervised Incremental Learning Framework with Uncertainty Assessment Mechanism for Radar Target Recognition

Abstract: In realistic radar application scenarios, numerous unannotated samples of new categories can be acquired continu-ously. It is very meaningful to make full use of these unannotated samples so that the recognition model can continuously generalize to new categories at a lower annotation cost. To this end, this let-ter proposes a semi-supervised incremental learning framework with uncertainty assessment named high-confidence pseudo-labeling network (HPN) for

radar target recognition tasks. Specifically, to update the recognition model with a large number of unannotated samples, an adaptive uncertainty measurement method is first proposed to calculate the confidence of unknown samples. Then, a confidence assessment mechanism based on Gaussian distribution maximization is presented to evaluate the correctness of pseudo-labeling, aiming to eliminate unreliable pseudo-labeling samples with high confidence. Next, the herding-based clustering method is exploited to select representative exemplars of each old target, so as to recall the knowledge of old categories during incremental learning. Finally, a multi-task incremental learning loss is presented, which enables the model to continuously identify new categories of targets in a semi-supervised learning framework. Evaluation experiments on the two datasets, i.e., moving and stationary target acquisition and recognition (MSTAR) and synthesis and measurement of pairs of labels experiment (SAMPLE), validate the effectiveness of the proposed method for incremental radar target recognition.

Bio: Haohao Ren is an associate professor of University of Electronic Science and Technology of China. From 2020 to 2021, he was a visiting Ph.D. student in the department of computer science and information engineering, University of Trento, Italy. His research interests include signal processing, image interpretation, and deep learning. He has been served as a Guest Editor for the Remote Sensing, a Youth Editor for Journal of Modern Radar, and also served as Editor for Journal of China Electronics Science and Technology Academy. Moreover, he also served as the chair of the workshop of the International Conference on Optical Engineering, Sensing and Instruments (2025).He has authored more than over 40 papers in some journals and conferences such as IEEE TGRS, IEEE TAES, IEEE JSTARS, RS, SP, IGARSS, IRC,etc.

3F Room Yuerong Hall <3 楼悦蓉厅>

Asst. Prof. Qiaolun Zhang, Politecnico di Milano, Italy

Speech Title: Network Resiliency: From Classical Communication Networks to Quantum Communication Networks

Abstract: Resiliency is a fundamental requirement for modern communication networks, which must ensure continuous and reliable operation in the presence of failures, cyber threats, and planned or unplanned disruptions. In this talk, I will first provide an overview of resiliency mechanisms in classical communication networks, focusing on proactive solutions implemented before failures occur and reactive solutions applied after failures. I will then transition to emerging quantum communication networks, discussing their unique resource characteristics. After a brief introduction to quantum communication networks, I will examine their resiliency mechanisms and constraints.

Finally, I will highlight the new resiliency challenges introduced by quantum technologies and outline how classical and quantum approaches can be jointly leveraged to build next-generation resilient network architectures.

Bio: Dr. Qiaolun Zhang is an Assistant Professor in the Department of Electronics, Information and Bioengineering at Politecnico di Milano, Italy. He received his Ph.D. from Politecnico di Milano. His research focuses on communication network design and quantum communication networks. In 2023, he also worked at Nokia Bell Labs France as an assistant optical networking researcher. Over the past five years, he has published or had accepted more than 30 papers in prestigious journals such as JSAC, TON, ComMag, JOCN, and TNSM, as well as leading international conferences including INFOCOM, OFC, and ECOC. His work has received several recognitions, including a Best Paper Award from ACP. He has also been named a Forbes Italy Top Graduate, nominated for the Bell Labs Centennial Prize, and awarded the National Scholarship for Outstanding Self-Financed Students Abroad.

3F Room Yuerong Hall <3 楼悦蓉厅>

Assoc. Prof. Gong Chen, Chengdu University of Information Technology, China

Speech Title: Overview of Recent High-Speed, High-Accuracy ADC Design Trends

Abstract: Recent advancements in ADC design have been driven by increasingly demanding system requirements for both higher sampling rates—often reaching GSps levels—and greater resolution, typically within the 24- to 32-bit range. In high-speed ADC design, key techniques include clock-interleaving architectures and frequency-segmented structures, alongside a growing trend toward minimizing analog circuitry while expanding digital processing capabilities. This "small analog, large digital" approach enables the integration of advanced digital calibration and compensation methods, such as non-uniform sampling and nonlinear dynamic equalization, which enhance overall system performance. For high-precision ADCs, the delta-sigma modulator remains the core architecture. Current developments focus on achieving high-accuracy sampling over wide dynamic ranges, as well as adopting hybrid architectures—such as combining delta-sigma with SAR (Successive Approximation Register) structures—to improve sampling rates without compromising resolution. These evolving design paradigms reflect a continued effort to balance speed, accuracy, and power efficiency in modern data conversion systems.

Bio: GONG CHEN received the B.S. degree in electronic engineering from University of Electronic Science and Technology of China (UESTC), in 2005, the M.S. degree in Information, Production and Systems (IPS) from the Waseda University, Japan, in 2010, and the Ph.D. degree in Integrated circuits and systems from the Kitakyushu University, Japan, in 2013. During 2013-2016, he joined the the Advanced Semiconductor Research Institute, Panasonnic, Osaka, Japan. In 2018, he completed a research assignment from IPS at Waseda University. Since 2018, he has been a Chair of the Microelectronic Department, Chengdu University of Information Engineering, Chengdu, China. His current research interests include physics, analog and mixed-signal electronics, and their joint feasibility aspects. He has authored or co-authored about 25 papers and holds six patents.

3F Room Yuerong Hall <3 楼悦蓉厅>

Dr. Lufeng Yuan, Beijing China-Power Information Technology Co.,Ltd., China

Speech Title: An Intelligent Data Query Tool for Power Business Based on the Collaboration of Large and Small Models

Abstract: We propose an intelligent power business query tool based on the collaboration of small and large models. This tool combines the accuracy of small models with the versatility of large models. It first uses Bert models trained on expert experience for precise classification of query data, then leverages retrieval augmented generation to provide more generalized data querying capabilities. We developed power business experience library, power business prompt word library, user permission library and API Unified Interface Library to enhance the effectiveness of retrieval augmentation for better service of power business. We selected eight scenarios involving 40 indicators for querying, achieving an accuracy rate of 70%-93% with most of response times under 60 seconds and a maximum of no more than 300 seconds.

Bio: Lufeng Yuan is a senior engineer at State Grid Corporation of China. He received his PhD degree of computer science from the Institute of Computing Technology, Chinese Academy of Sciences, Beijing in 2017. As a big data expert

of State Grid Corporation of China, he works in power informatization and digitalization. He has published more than 10 papers and written 2 books. His research interests mainly focus on Big data, artificial intelligence and digital twins.

5F Room No. 6 <5 楼 6 号厅>

Asst. Prof. Xiangyi Chen, Southwest Jiaotong University, China

Speech Title: Model Migration in Digital Twin-Empowered Vehicular Edge Computing

Abstract: The accuracy of digital twin models hinges on the prompt collection of information from the vehicular environment. However, the high mobility of vehicles and the dynamically changing network environment pose significant challenges. Dynamic twin model migration can reduce the Age of Information (AoI) by bringing twin models closer to their vehicles. Existing works rarely consider the inherent differences in optimization cycles between digital twin model migration and data upload, which potentially leads to suboptimal cost efficiency and information freshness. Specifically, real-time vehicular data must be rapidly uploaded to edge servers to ensure the accuracy and timeliness of digital twin models, while frequent migration of twin models over short periods incurs substantial costs. Therefore, we propose a dual-timescale bilevel learning approach, where the upper-layer learning optimizes twin model migration decisions on a long timescale to achieve forward-looking model migration, and the lower-layer learning optimizes data upload and resource allocation decisions on a short timescale to ensure the accuracy and timeliness of digital twin models. Then, we design a multi-agent selective parameter sharing approach based on spatiotemporal dependency correlations to accelerate model convergence and reduce communication costs among agents. Moreover, through a rigorous theoretical analysis, we prove the convergence of the dual-timescale bilevel learning with broad applicability, and extensive experimental results demonstrate the effectiveness of the proposed approach.

Bio: Xiangyi Chen, Ph.D., Assistant Professor. Her research interests include multi-access edge computing, edge intelligence, artificial intelligence, federated learning, and deep reinforcement learning. She has published numerous SCI-indexed journal and conference papers in high-impact academic venues such as *IEEE Journal on Selected Areas in Communications (JSAC)*, *IEEE Transactions on Mobile Computing (TMC)*, *IEEE Internet of Things Journal (IoTJ)*, *IEEE Systems Journal (SJ)*, and *IEEE Global Communications Conference (GLOBECOM)*. She has led several research projects, including the China Postdoctoral Science Foundation, the Natural Science Foundation of Sichuan Province, and the Fundamental Research Funds for the Central Universities. She also participates in national-level programs such as the National Key R&D Program of China and the National Natural Science Foundation of China (NSFC). She serves as a TPC member for the 23rd IEEE International Conference on Ubiquitous Computing and Communications (*IEEE IUCC 2024 Workshop*), and acts as a reviewer for leading international journals including *IEEE Transactions on Mobile Computing (TMC)*, *IEEE Transactions on Wireless Communications (TWC)*, *IEEE Transactions on Network Science and Engineering (TNSE)*, *IEEE Transactions on Vehicular Technology (TVT)*, *IEEE Internet of Things Journal (IoTJ)*, and *IEEE Network*.

5F Room No. 7 <5 楼 7 号厅>

Assoc. Prof. Yi Zhao, Chang'an University, China

Speech Title: Principle and Key Applications of Diffusion Generative Models

Abstract: Since 2023, Diffusion models—a relatively novel paradigm within generative models—have achieved significant breakthroughs in signal processing, image/video generation, communication, robotics, and multimodal large language models (Reports can be found in top-tier artificial intelligence conferences including CVPR, AAAI, ICCV, etc.).

This talk, drawing from the author's research and the latest international findings, explores the mathematical mechanisms of diffusion models, presents specific application cases, and discusses future development trends.

Bio: Dr. Associate Prof. Yi Zhao received the M.Eng. degree from Pierre and Marie Curie University (Sorbonne University), France, in 2010 and the Ph.D. degree from the University of Toulon, France, in 2013. He has been with the School of Electronics and Control Engineering, Chang'An University since 2014. His research interests include Computer vision, Image Processing, Reinforcement learning and intelligent control systems. He has been an Active Reviewer of more than 30 journals and conferences and Technical Committee Member/Session Chair for over 20 IEEE/ IET/ACM conferences since 2012.

5F Room No. 7 <5 楼 7 号厅>

Prof. Yikang Chen, China Southern Power Grid, China

Speech Title: Research and Application of Key Technologies for Integrated Equipment Systems for Subsea Energy Infrastructure Inspection Based on Unmanned Surface Vessel (USV) Robots

Abstract: This project focused on the demand for submarine cable inspection and carried out research on the overall design technology of heterogeneous robot systems, high-precision deep-sea navigation and control technology, heterogeneous robot collaborative operation, and submarine cable inspection technology. A heterogeneous collaborative submarine cable inspection robot of "unmanned surface vessel + ROV" was successfully developed, solving the collaborative control problem of unmanned surface vessels and ROVs under different motion states, achieving dual-platform linkage control on the water surface and underwater, establishing the standard for heterogeneous robot submarine cable condition statistics and route survey methods, and formulating the operation specifications for submarine cable inspection robots based on unmanned surface vessels, filling the domestic gap. The overall project achievements have reached the international leading level.

Bio: Chen Yikang, Ph.D., Professor of Engineering. The research directions are: submarine cable operation and maintenance technology, intelligent unmanned equipment development, computer simulation and communication technology. Together with the third-level leading professional technical expert in the submarine cable direction of China Southern Power Grid UHV Company, the specialist in submarine cable equipment management of Haikou Branch Submarine Cable Management Department, a candidate for the Hainan South China Sea Famous Young Project, and a candidate for the Special Support Program for high-level talents of China Southern Power Grid, he has won 4 provincial and ministerial-level awards and 4 municipal-level awards. Contact person for the submarine cable direction of the "Joint Laboratory for DC Transmission Equipment and Safe Operation of Submarine Cables" of the China Southern Power Grid Company's Joint Innovation Laboratory, and the first contact person of the world's largest International Submarine Cable Protection Technology Organization (ICPC). Participated in the compilation of 1 national standard, 1 industry standard and 3 enterprise standards. The first author has published 2 SCI papers, 7 EI papers and 1 core Chinese paper. 35 authorized patents (14 invention patents and 1 international patent); Published three monographs.

Zoom B: 889 1235 9993 (Online)

Dr. Isma Hamid, National Textile University, Pakistan

Speech Title: A Segment-Level Contextual Embedding Approach for Depression Detection Sarcastic Text

Abstract: Due to increasing mental health issues depression detection is becoming important by using online textual

data. But detecting in sarcastic text is more difficult because it is not easy to find out what is the true meaning of statement. However, Present studies just focused on English dataset for detecting depression in sarcastic dataset which means there is a research gap for low resource language such as Urdu. The proposed study intents to build a NLP-driven system to detect depression from sarcastic text by using the transformer based embedding. The aim is using contextual word representation for low resource language Sarcastic text to improve classification performance. The findings show the significance of transformer-based embedding in identifying depression within sarcastic Low resource language . The proposed study forms a consistent framework for detecting depression in low-resource language by assimilating various performance evaluation metrics. In future, for wider applications in mental health detection, the proposed approach can be use for multimodal data and cross-lingual detection of sarcasm.

Bio: Dr. Isma is working as assistant Professor in public sector university of Pakistan. She has sixteen years of teaching, research, and application development experience in reputed public sector universities of Pakistan. She published thirty research papers in different EI and SCI journals and Conferences. Her research interests are Behavior Analysis, Visualization Technology of Social Networks, Image Processing, Pattern Recognition and Big Data Analysis. She has performed duties as external examiner to evaluate thesis of M.Sc. (Computer Science), M.S (Computer Science) and PhD (CS). During her university service, she supervised more than fifty projects of B.S, M.S and PhD students. Dr. Isma has completed two funded Projects. She has served her duties as a potential reviewer in many renowned SCI and Scopus journals and conferences.

Zoom E: 898 6687 5208 (Online)

Dr. Yan Li, University of Nottingham, Ningbo, China

Speech Title: Research on the Implementation of Algorithmic Thinking and Sentiment Analysis by Applying the Knowledge System Based on Named Entity Recognition Models and Relationship Mapping Models

Abstract: AI literacy is an emerging field that aims to equip individuals with the knowledge and skills to understand, interact with, and make informed decisions about AI technologies. Our research team aims to practice and reform the BERT-based model to develop an algorithmic thinking education innovation exploration curriculum and conduct sentiment analysis. To improve AI literacy and the efficiency of undergraduate students' programming ability, reduce the burden of data retrieval work on students, and enhance the efficiency of students' programming learning, this research has developed a series of algorithmic thinking courses based on the BERT model and aims to develop a knowledge graph-based question-answer system to enable undergraduate students to understand the operating rules and basic syntax of programming. The study finds that the system collects data from student and teacher portals and uses these data for sentiment analysis to optimize the system and allow researchers to efficiently obtain information for self-directed learning. The demand for AI literacy among teachers and students in higher education is increasing with the rapid development of artificial intelligence. The research team develops a knowledge engineering system, and is divided into two ends to enable both teachers and students to understand common questions in the coding learning process. A new algorithm model is introduced, which is divided into two tiny tasks: a named entity recognition task for extracting entities in the higher educational programming domain based on the user end, and a question relationship mapping task based on the user end. The study conducts experiments and analyses on a self-constructed question-and-answer dataset, demonstrating that the model is more efficient compared to classic models. The system enables university teachers and students to ask questions and learn independently during their programming studies, and to seek solutions to similar problems encountered historically, thereby improving the efficiency of programming learning for teachers and students in higher education.

Bio: Yan Li, a researcher at the University of Nottingham Ningbo China, IEEE Senior Member, IET Fellow, UK Advanced HE Principal Fellowship, CEng. Yan has published over 20 academic papers, holds 2 invention patents. Yan published a

chapter in the monograph named "Emotions in Code - The AI Frontier of Sentiment Analysis" in 2025. She serves on the editorial board of multiple artificial intelligence journals, such as the American Journal of Artificial Intelligence, as well as on the editorial boards of several important international and domestic academic conferences. Her main research areas include computational intelligence, neural networks, machine learning, sentiment analysis, named entity recognition, and knowledge engineering.

Zoom E: 898 6687 5208 (Online)

Asst. Prof. Farhan Amin, Yeungnam University, South Korea

Speech Title: Improving the Chances of Manuscript Acceptance: How to Address Peer Reviewers Comments

Abstract: In this invited talk, we learn how to respond to the reviewer's comments. Review is a mandatory process in every journal. After completing an editorial review, generally, authors will receive a journal decision based on the critical review comments. If the authors do not handle these comments seriously. It will increase the rejection chance. Therefore, in this invited talk, we first explain the peer review process by considering real-world examples. We learn how to understand and digest the reviews. Then, based on these reviewers 'comments, how authors can revise the paper? How do authors communicate their revisions to the reviewers and the editor-in-chief? Overall this invited talk enable the researcher to improve his reading, learning, and writing skills and increase the chance of paper acceptance ratio.

Bio: Farhan Amin received the M.S. degree in computer science from International Islamic University Islamabad (IIUI), in August 2012, and the Ph.D. degree from the Department of Information and Communication Engineering, College of Engineering, Yeungnam University, Gyeongsan, South Korea, in October 2020. He was an Assistant Professor with the Department of Computer Engineering, Gachon University, South Korea. He is currently working as an Assistant Professor with the Department of Computer Science Engineering, Yeungnam University, Gyeongsan, South Korea. He has over 12 years of teaching and research experience. His research interests include the Internet of Things, Social Internet of Things, Big data, and Data science. He was a recipient of a fully funded scholarship for master's and Ph.D. studies. He is a member of IEEE and ACM.

Invited Speaker

Monday, December 15, 2025 (UCT+8 Beijing Time)

Zoom A: 819 0941 6703 (Online)

Assoc. Prof. Xin Nie, Wuhan Institute of Technology, China

Speech Title: Innovative Applications of Machine Vision Techniques in Industrial Product Inspection

Abstract: Machine vision technology has revolutionized industrial product inspection by enhancing accuracy and reliability. Advanced applications in detecting lithium battery electrode defects, analyzing chip porosity, and inspecting BGA defects have been explored. Integration of machine vision with deep learning and graph convolutional networks offers new strategies for high-precision quality control in industrial settings. The development of specialized algorithms and models has been a key focus in this field. For instance, the application of an innovative X-ray image enhancement algorithm based on MSR and RPCA has significantly improved image clarity for lithium battery inspection. Additionally, the use of the LBPEDNet network has enabled precise detection of pole-piece endpoints in lithium batteries. Furthermore, the ASTM-DGCN model has been employed for industrial robot posture prediction. These advancements address challenges such as poor imaging quality and limited computing resources. They contribute to the progress of industrial automation and provide valuable insights for researchers and practitioners in the field of machine vision technology.

Bio: Xin Nie holds a Ph.D. in Computer Software and Theory from Wuhan University. He is currently an Associate Professor at the School of Computer Science and Engineering, Wuhan Institute of Technology, focusing on cutting-edge research in Software Engineering and Artificial Intelligence. He has extensive experience in software R&D, particularly in the field of integrated electronic information systems. He has published numerous high-quality academic papers and holds several patents and software copyrights. He is actively involved in academic organizations such as IEEE, CCF, and CAAI, and serves on the editorial boards and committees of various international conferences and journals. His research interests include Intelligent Optimization Algorithms, Evolutionary Computation, Cloud Computing, Machine Learning, and Deep Learning.

Zoom B: 889 1235 9993 (Online)

Dr. Maryam Cheraghy, Wenzhou-Kean University, China

Speech Title: Machine Learning-Driven Wireless Resource Allocation: SVM-Based Factor Graph Design in SCMA Networks

Abstract: Efficient resource allocation is a key challenge in next-generation wireless networks, particularly in dense 3D environments. Sparse Code Multiple Access (SCMA) offers a promising solution by enabling multiple users to share subcarriers non-orthogonally, but maximizing the sum-rate (Max-SR) remains computationally intensive. In this talk, I present a machine learning-assisted framework for solving the Max-SR problem in 3D SCMA networks. The proposed method uses Support Vector Machines (SVM) to predict the optimal factor graph matrix (FGM), which determines subcarrier-user assignments. To improve training quality, we introduce an Iterative Inter-Group Subcarrier Allocation (IIGSCA) algorithm that simulates realistic interference patterns. By formulating resource allocation as a multiclass

classification task, our approach enables near-optimal performance with far lower complexity than exhaustive search (ES). This presentation will cover the algorithmic design, learning process, and performance evaluation, highlighting the potential of AI-driven solutions for scalable wireless communication systems.

Bio: Dr. Maryam Cheraghy obtained her PhD in Communication and Information Engineering from Shanghai Jiao Tong University. She joined the Broadband Access Network Laboratory during her PhD studies. She also received her Master's degree from Huazhong University of Science and Technology, China, in 2014. She joined the Computer Science department in 2022 and is currently working as a lecturer at Wenzhou-Kean University. Dr. Cheraghy serves as an Editorial Board member/reviewer for IEEE Transactions on Vehicular Technology (TVT) and IEEE Communication Letters, as well as for various IEEE Conferences. With about 14 years of experience in the telecommunications industry, she has been involved in projects such as NSFC and Huawei company. Her research interests include B5G/6G Wireless Communication, Reconfigurable Intelligent Surfaces, and AI/Machine Learning.

Zoom C: 872 3009 7202 (Online)

Dr. Weiwei Jiang, Beijing University of Posts and Telecommunications, China

Speech Title: AI-Native 6G Networks: An Overview

Abstract: Unlike current 5G networks, where AI is often applied post-deployment, AI-native 6G envisions a paradigm shift, embedding intelligence into every layer of network design, operation, and optimization. This integration aims to address escalating demands for ultra-low latency, ultra-high bandwidth, and massive connectivity while enabling disruptive applications like autonomous systems, immersive holographic communications, and smart city ecosystems. The talk will delve into how AI technologies, such as machine learning, neural networks, and federated learning, will redefine network functions, enabling real-time resource allocation, predictive maintenance, and adaptive security protocols. Emphasis will be placed on leveraging edge computing and AI-specific hardware to decentralize intelligence, reducing reliance on centralized cloud systems and mitigating latency bottlenecks. Critical challenges will also be examined, including ensuring robustness in dynamic environments, addressing ethical concerns like bias and privacy, and balancing energy efficiency with computational demands. By merging AI with quantum computing, blockchain, and IoT, 6G networks could unlock unprecedented capabilities in decentralized data processing, trustless collaborations, and dynamic spectrum sharing.

Bio: Dr. Weiwei Jiang received the B.Sc. and Ph.D. degrees from the Department of Electronic Engineering, Tsinghua University, Beijing, China, in 2013 and 2018, respectively. He is currently an assistant professor with the School of Information and Communication Engineering, Beijing University of Posts and Telecommunications, and Key Laboratory of Universal Wireless Communications, Ministry of Education. His current research interests include artificial intelligence, machine learning, big data, wireless communication and edge computing. He has published more than 60 academic papers in IEEE Trans and other journals, with more than 4000 citations in Google Scholar. He is one of 2023 and 2024 Stanford's List of World's Top 2% Scientists.

Zoom D: 847 0940 6734 (Online)

Dr. Teodoro F Revano Jr, Mapua Malayan Colleges Laguna, Philippines

Speech Title: AI-Enhanced Cyber Defense for 5G, 6G, and IoT: Securing the Future of Communication Networks

Abstract: The acceleration of 5G deployment, the advent of 6G technologies, and the rapid proliferation of IoT

ecosystems are transforming global communication networks; yet, these improvements concurrently render systems vulnerable to more sophisticated cyberattacks. Conventional defensive systems are unable to meet the complexity, scalability, and real-time requirements of next-generation networks. This paper investigates the pivotal role of artificial intelligence (AI) in enhancing cybersecurity inside 5G, 6G, and IoT frameworks. Utilizing deep learning for intrusion detection, AI-powered anomaly detection, and predictive threat modeling enables networks to autonomously identify weaknesses, anticipate attacks, and implement adaptive responses. The use of AI at the network edge and in ultra-dense settings significantly improves latency-sensitive security operations. Applications of network slicing, extensive IoT connections, and 6G intelligent surfaces exhibit enhanced resilience and operational dependability. This study highlights the importance of AI-driven cyber protection as a cornerstone for secure, intelligent, and future-ready communication systems.

Bio: Dr. Teodoro F Revano Jr is a dedicated educator, researcher, and author with a strong background in information technology and education. With years of experience in both academic leadership and research, he has contributed significantly to the advancement of IT education and innovation. He holds a doctorate degree and has served in various capacities in the academy, including as program chair and research coordinator. A registered author recognized by the National Book Development Board and a regular member of the National Research Council of the Philippines, Dr. Revano is known for his commitment to shaping future professionals through scholarly work and curriculum development.

Zoom E: 898 6687 5208 (Online)

Assoc. Prof. Chao Fang, Beijing University of Technology, China

Speech Title: Deep Reinforcement Learning-Based Trajectory Optimization and Collision Avoidance for Multi-UAV Data Collection

Abstract: With the explosive increase of wireless traffic gener-ated by Internet of Things (IoT), it is challenging for the ground communication infrastructures to achieve flexible and efficient data collection. In this paper, we propose an intelligent trajectory optimization and collision avoidance scheme for cooperative multi-UAV data collection in urban IoT environments, where a new Double Deep Q-Network (D3QN) is designed to maximize the total collected data by optimizing UAVs' flying speeds and dynamically adjusting the IoT-UAV associations. Simulations show that the proposed solution achieves the fastest convergence and the lowest collision rate with the average data collection rate of 91.15%, compared to baseline methods. Moreover, 4 UAVs can achieve the data collection rate of 95% compared to that of 50%in single UAV scenario.

Bio: Chao Fang received his B.S degree in Information Engineering from Wuhan University of Technology, Wuhan, China, in 2009, and the Ph.D. degree with the State Key Laboratory of Networking and Switching Technology in Information and Communication Engineering from Beijing University of Posts and Te4lecommunications, Beijing, China, in 2015. He joined the Beijing University of Technology in 2016 and now is an associate professor. From August 2013 to August 2014, he had been funded by China Scholarship Council to visit Carleton University, Ottawa, ON, Canada, as a joint doctorate. Moreover, he is the visiting scholars of University of Technology Sydney, Commonwealth Scientific and Industrial Research Organization, Hong Kong Polytechnic University, Kyoto University, Muroran Institute of Technology, and Queen Mary University of London. Dr. Fang is the senior member of IEEE, and the vice chair of technical affairs committee in IEEE ComSoc Asia/Pacific Region (2022-2023). Moreover, he served as the Technical Program Committee Chair of SPCNC 2024, the Session Chairs of ICC 2015, ICCC 2023, and WCNC 2024, Workshop Chairs of ICFEICT (2022-2024) and ICNCIC (2023-2024), and Poster Co-Chair of HotICN 2018. He won the Best Paper Award of IEEE ICFEICT 2022 and 2024, ICCSN 2024, and NCIC 2024. His current research interests include future networks, intelligent cloud-edge-terminal cooperation computing, and intelligent network control.

Zoom E: 898 6687 5208 (Online)

Assoc. Prof. Jifei Tang, Hangzhou Dianzi University, China

Speech Title: AI-Driven intelligent signal processing under extreme environment

Abstract: Signal processing in extremely harsh environments faces fundamental challenges that push conventional methods to their limits. Traditional methods are inadequate due to severe signal non-stationarity, extremely low signal-to-noise ratios (SNR), and complex interference patterns. This talk aims to provide a comprehensive overview of how AI is redefining the boundaries of what is possible in signal processing under extreme conditions. AI techniques can adaptively extract complex signal features and noise statistics without explicit mathematical models, which enables a more robust, adaptive, and intelligent signal reconstruction and analysis.

The topic will be structured around several key applications:

- AI-Assisted detection and enhancement of extremely weak signals.
- Data-Driven separation and reconstruction of non-stationary signals.
- Anomaly detection and signal recovery.

Bio: Jifei Tang is now with Hangzhou Dianzi Univ. as an associate professor and PI in intelligent circuit and system design laboratory. His research interest includes intelligent signal processing and communication system design for deep space missions, and joined the China's lunar exploration program as a system design engineer. He has published more than 20 works in IEEE TAES, IET Communications and IEEE TCAS2. And funded by general projects from NSFC. He also serves as a TPC member in IEEE CECNet for three consecutive years.

Oral Session 1

Saturday, December 13, 2025 (UCT+8 Beijing Time)

Ubiquitous Communication Systems and Wireless Communication Chairman: Dr. Nanxi Li, China Telecom Research Institute, Beijing, China	
13:00-15:25	3F Room No. 3 <3 楼 3 号厅>
13:00-13:20 Invited Speech C516	Towards Robust 5G MCS Prediction via Physically Consistent Features and Beamforming Fusion **Assoc. Prof. Xiaojun Hei,** Huazhong University of Science and Technology, China
13:20-13:40 Invited Speech C1309	The Dawn of 6G Standardization: Thinking on Physical Layer Design by Learning from 5G **Dr. Nanxi Li,** China Telecom Research Institute, Beijing, China
13:40-13:55 C1294	Performance and Design for Simultaneous Signal Detection in Massive Ambient Backscatter Communication **Diancheng Cheng**, China Mobile Research Institute, China
13:55-14:10 C1468	5G-A ISAC-Enabled Robust Multi-Modal Fusion for Low-Altitude Target Localization **Yangrui Dong**, China Unicom, China
14:10-14:25 C1295	A Novel Blocked OTFS-Based Modulation WithRepetition Coding for HF Wideband **Kun Xu**, Information Support Force Engineering University, China
14:25-14:40 C1253	A Novel Consensus Protocol for Cooperative Spectrum Sensing in Cognitive Radio Networks **Zheng Xiandong**, Southeast University, China
14:40-14:55 C1497	Tractable Coverage Analysis of Perturbed Hexagonal Lattice Networks with Base Station Location Shifts **Xu Yingying**, Southeast University, China
14:55-15:10 C1344	Research on Event-Triggered MPC-MFAC Anti-Jamming Algorithms for Wireless Communication Systems **Zhou Quan**, The Sixty-third Research Institute, National University of Defense Technology, China
15:10-15:25 C178	FilterLoss: A Transfer Learning Approach for Communication Scene Recognition **Jiasong Han**, Tsinghua University, China

Oral Session 2

Saturday, December 13, 2025 (UCT+8 Beijing Time)

Modern Communication Systems and Signal Processing Chairman: Assoc. Prof. Bo Li, Ningxia University, China	
13:00-15:45	3F Room Yuerong Hall <3 楼悦蓉厅>
13:00-13:15 C1121	Enhancing Optical Link Performance with Per-Span Nonlinear SNR Estimation Enabled by Longitudinal Power Monitoring **Dario Pilori,** Politecnico di Torino, Italy
13:15-13:30 C1443	Decoding Optimization of Spatially Coupled Polar Codes Based on Improved State Monitoring **Mingqiang Su,** Huaqiao University, China
13:30-13:45 C1469	Lower Bounds on Block Error Rates of Perturbation-Enhanced SC Decoding for Polar Codes **Zhicheng Liu,** Sichuan University, China
13:45-14:00 C1286	On the Adversarial Attack Analysis and Security Defense Scheme for Open-Set Modulation Recognition **Jiaying Han,** USTC, China
14:00-14:15 C1234	A Deconvolution Based Sensing Method for Target Detection with Non-uniform OFDM Symbols **Yuming Jiang,** China Mobile Research Institute, China
14:15-14:30 C161	Analysis of Prediction Error's Impact of Usable Frequency Window on HF Communications Success Rate **Ke Du,** National University of Defense Technology, China
14:30-14:45 C1369	SNR-Aware Contrastive Meta-Learning for Few-Shot Radar Emitter Identification **Asim Saleem,** Northwestern Polytechnical University, China
14:45-15:00 C136	Knowledge-Base and Contrastive-Language–Image-Pretraining Assisted Semantic Image Transmission **Chongyang Li,** Central China Normal University, China
15:00-15:15 C1246	EVC: A Lossy Vibrotactile Coding with Discrete Wavelet Transform **Nian He,** Zhicheng College of Fuzhou University, China
15:15-15:30 C1386	Blind Massive User Detection for Unsoursed Random Access over Rayleigh Fading Channels **Yilun Zhang,** Beijing University of Posts and Telecommunications, China
15:30-15:45 C132	Time-frequency-based Hybrid Channel Segmentation Network for Long-term Time Series Forecasting **Zhiqiang Jiang,** Southwest Jiaotong University, China

Oral Session 3

Saturday, December 13, 2025 (UCT+8 Beijing Time)

Channel Modeling and Estimation Chairman: Assoc. Prof. Hongwei Wang, University of Electronic Science and Technology of China, China	
13:00-14:50	5F Room No. 6 <5 楼 6 号厅>
13:00-13:20 Invited Speech	Near/Far-Field Channel Estimation for Millimeter wave/Terahertz Systems with ELAAs: A Block-Sparsity-Aware Approach **Assoc. Prof. Hongwei Wang,** University of Electronic Science and Technology of China, China
13:20-13:35 C1265	IRS Deployment Under Practical Channel Model: Joint Position and Rotation Optimization **De Xu,** Beijing University of Posts and Telecommunications, China
13:35-13:50 C501	A Low-Latency Framework for Channel Estimation and Reconfiguration **Jinyi Hu,** Northwestern Polytechnical University, China
13:50-14:05 C154	Doppler Effect Characteristics Analysis of an Arctic HF Wideband Channel **Manming Qin,** National University of Defense Technology, China
14:05-14:20 C1219	Research on Path Loss Models for Terahertz Wireless Channel Transmission **Jiahao Shen,** Xi'an University of Posts and Telecommunications, China
14:20-14:35 C1500	Enhancing Channel Randomness with Dynamic Metal Plate Scattering A Computational and Simulational Study **Boqian Liu,** Purple Mountain Laboratories, China
14:35-14:50 C1510	Training Precoder and Combiner Design for Compressed Sensing Based Millimeter Wave Channel Estimation **Shenyang Xiao,** State Grid Shandong Information& Telecommunication Company, China

Oral Session 4

Saturday, December 13, 2025 (UCT+8 Beijing Time)

Adaptive Network Security Defense and Threat Perception Chairman: Assoc. Kefeng Guo, Nanjing University of Aeronautics and Astronautics, China	
13:00-15:25	5F Room No. 7 <5 楼 7 号厅>
13:00-13:20 Invited Speech C502	Reliable Covert Communication for NOMA-based Satellite Networks Under Interference Constraint **Assoc. Prof. Kefeng Guo,** Nanjing University of Aeronautics and Astronautics, China
13:20-13:40 Invited Speech	Pseudonym Authentication and Revocation in Vehicular Public Key Infrastructure for Secure Cooperative Intelligent Transportation System **Assoc. Prof. Salabat Khan,** Qilu Institute of Technology, China,
13:40-13:55 C177	Lightweight CP-ABE scheme with Puncture Revocation for Smart Civil Aviation **Yiao Ma,** Civil Aviation of China University, China
13:55-14:10 C170	Behavioral Metrics for Vulnerability Discovery and Mitigation in Real-World Telecom Software Systems **Danang Aditya,** Telkom University, Indonesia
14:10-14:25 C1200	A Visual Cryptography Scheme Resistant to Random Number Attacks **Yuan Gao,** PLA Information Engineering University, China
14:25-14:40 C140	Smart Jamming via Downlink Control Information Sniffing and Its Countermeasures **Heng-Wei Lou,** Xidian University,China
14:40-14:55 C1350	STAR-RIS-NOMA Assisted Covert Communication With Hardware Impairments and Imperfect SIC **Shuya Liu,** Henan University, China
14:55-15:10 C1453	IRS-Aided Privacy Protection Against WiFi-Based Respiration Monitoring **Ganlin Zhang,** China Mobile Group Design Institute Co., Ltd, China
15:10-15:25 C1400	Blockchain-based Truststore and CA Management for Intelligent Transportation Systems **Salabat Khan,** Qilu Institute of Technology, China

Oral Session 5

Saturday, December 13, 2025 (UCT+8 Beijing Time)

Joint Resource Allocation and Optimization Management in Communication Networks Chairman: Prof. Youping Zhao, Beijing Jiaotong University, China	
13:00-15:25	5F Room No. 8 <5 楼 8 号厅>
13:00-13:20 Invited Speech	Communication-Sensing-Computation Integration Oriented Joint Optimization of Latency and Energy Consumption in Internet of Vehicles **Assoc. Prof. Yaqiong Liu,** Beijing University of Posts and Telecommunications, China
13:20-13:40 Invited Speech	Matrix Information Geometry Detector: From Shallow to Deep Manifold **Dr. Xiaoqiang Hua,** National University of Defense Technology, China
13:40-13:55 C1474	Dynamic Hierarchical Protection Resource Allocation Method for Cloud-Edge-Terminal Collaboration **Shengye Gong,** Beijing University of Posts and Telecommunications, China
13:55-14:10 C1390	Resource Synchronization Mechanism Design in Computing Power Networks: An Adaptive Multi-Agent Reinforcement Learning Framework **Siyi Huang,** Beijing University of Posts and Telecommunications, China
14:10-14:25 C1448	Towards Energy aware Scheduling for Computing Force Networks **Shijie Chen,** Hangzhou Dianzi University, China
14:25-14:40 C1120	Mean-Field-Game Driven Anti-Interference Power Control for Dense UAV Networks **Yue Ding,** Joint appointment: Nanjing University of Information Science and Technology & No. 63 Research Institute, National University of Defense Technology, China
14:40-14:55 C1202	Pilot Assignment Algorithm Based on Dynamic Coalitional Game in Cell-Free Massive MIMO-NOMA Systems **Zonghao Liu,** Beijing University of Posts and Telecommunications, China
14:55-15:10 C1228	A Graph-Attentive Multi-Agent Reinforcement Learning Framework for Dynamic Spectrum and Power Allocation in UAV-UGV Network **Wei Wang,** he Sixty-Third Research Institute, National University of Defense Technology, China
15:10-15:25 C1287	A Hierarchical Deep Reinforcement Learning Approach to Joint Access Control and Resource Allocation in Multi-Beam LEO Satellite Networks **Tianqi Zhang,** Beijing university of technology, China

Oral Session 6

Saturday, December 13, 2025 (UCT+8 Beijing Time)

Service-Based Information Networks and Intelligent Access Control Technologies Chairman: Dr, Feng Wang, Singapore University of Technology and Design (SUTD), Singapore	
16:00-17:40	3F Room No. 3 <3 楼 3 号厅>
16:00-16:20 Invited Speech	Breaking Snapshot Barrier: Graph-Based Learning for Reliable NTN Mobility Management **Research Fellow, Feng Wang,** Singapore University of Technology and Design (SUTD), Singapore
16:20-16:40 Invited Speech	Edge Intelligent Application Systems **Prof. Peiyan Yuan**, Henan Normal University, China
16:40-16:55 C1269	Multi-View Graph Balanced Clustering for Scalable Microservice Decomposition in Cloud Computing **Yiming Zhou,** Beijing University of Posts and Telecommunications，China
16:55-17:10 C1466	Dynamic Multi-Path Transmission Strategy for Dragonfly Topology **Gongyu YANG,** National University of Defense Technology, China
17:10-17:25 C1292	Lightweight Spectrum Sensing via Multi-Source Knowledge Distillation for Cognitive Radio Networks **Yiming Zhou,** Beijing University of Posts and Telecommunications, China
17:25-17:40 C1436	A Stability Evaluation-Based Semi-Supervised Positioning Method for Hybrid Wireless Scenarios **Runhui Yang,** Beijing University of Posts and Telecommunications, China

Oral Session 7

Saturday, December 13, 2025 (UCT+8 Beijing Time)

Next-Generation Communication Network Technologies and Future Development Chairman: Assoc. Prof. Yingtao Niu, National University of Defense Technology, China	
16:00-18:25	3F Room Yuerong Hall <3 楼悦蓉厅>
16:00-16:20 Invited Speech	Coping with Unknown Jamming: Reflections on Intelligent Anti-Jamming Communications **Assoc. Prof. Yingtao Niu,** National University of Defense Technology, China
16:20-16:40 Invited Speech	Unlimited Sampling based Integrated Sensing and Communication system **Dr. Yan Li,** University of Electronic Science and Technology of China, Chengdu, China
16:40-16:55 C1498	Joint Phase Shifts and Positioning Signal Optimization in RIS-Assisted User Position Systems **Xinying Xiang,** Nanchang University, China
16:55-17:10 C1383	Mapping and Optimization from AFDX Virtual Links to Time Sensitive Networking **Da Chai,** Hangzhou International Innovation Institute of Beihang University, China
17:10-17:25 C1439	A High-Reliability Routing Strategy for Dense Mobile Ad Hoc Networks Based on the Link Value **Yin Yu,** Tsinghua University, China
17:25-17:40 C1276	A QoS-aware RL-based Virtual Network Embedding Framework for Wireless Multi-hop Networks **Yingjie Wang,** Zhejiang University, China
17:40-17:55 C1145	Energy-Efficient Telehealth IoT: Enhancing Real-Time Care with Fog-Cloud Integration **Alex Kuo,** School of Health Information Science, University of Victoria, BC, Canada
17:55-18:10 C1379	A Selective Data Upload Approach for Enhancing Spatial Coverage in Vehicular Crowdsensing Systems **Jie Huo,** Academy of Military Science, China
18:10-18:25 C514	Prediction of Hotspots in Fine grained Content Delivery Services Based on Graph Neural Networks **Yang Zhao,** Guizhou University, China

Special Session 2

Saturday, December 13, 2025 (UCT+8 Beijing Time)

High Dynamic Communication Technology for Space-Ground Integration Network Chairman: Prof. Xin Yang, Northwestern Polytechnical University, China	
16:00-18:25	5F Room No. 6 <5 楼 6 号厅>
16:00-16:20 Invited Speech C2006	AFDM Based Integrated Sensing and Communication System with Composite Pilot Aided Channel Weighted Estimation **Prof. Xin Yang,** Northwestern Polytechnical University, China
16:20-16:40 Invited Speech	Blockchain-Enabled Three-Dimensional Radio Environment Map (REM) for Space-Air-Ground Integrated Network Spectrum Assessment **Prof. Youping Zhao,** Beijing Jiaotong University, China
16:40-17:10 Invited Speech	Mega Constellation Network Routing: Exploring Efficient and Reliable Inter-Satellite Communication Paths **Assoc. Prof. Jiaxin Zhang,** Beijing University of Posts and Telecommunications, China
17:10-17:25 C1107	3D Urban Radio Map Estimation Based on UAV Sparse Measurement Data **Wenqiang Chen,** Tsinghua University, China
17:25-17:40 C2001	Access Techniques for Aircraft in Satellite-Based Communication and Control Systems **Ting Xiao,** Northwestern Polytechnical University, China
17:40-17:55 C1138	High-Precision Multi-Satellite TDOA Geolocation Algorithm Based on Cascade Filtering **Xiaoyang Chen,** China Academy of Space Technology, China
17:55-18:10 C2002	Energy Efficiency Optimization Based on AFDM in Space-Air-Ground network **Deyu Song,** Northwestern Polytechnical University, China
18:10-18:25 C1454	Prospect of 6G-satellite integrated communication technology **Haoning Zhu,** China Academy of Space Technology, China

Special Session 5

Saturday, December 13, 2025 (UCT+8 Beijing Time)

Network Security for Next Generation AI Services Chairman: Assoc. Prof. Danyang Zheng, Southwest Jiaotong University, China Assoc. Prof. Chengzong Peng, Chengdu University of Information Technology, China	
16:00-18:25	5F Room No. 7 <5 楼 7 号厅>
16:00-16:20 Invited Speech	Ubiquitous LLM Inference as a Service for Edge Networks **Assoc. Prof. Danyang Zheng,** Southwest Jiaotong University, China
16:20-16:40 Invited Speech	Security-aware Sub-chain Embedding and Protection in Edge Networks **Assoc. Prof. Chengzong Peng,** Chengdu University of Information Technology, China
16:40-16:55 C5001	Security-aware Anomaly Detection Service Deployment in Social Networks **Zishan Ding,** School of Cybersecurity (Xin Gu Industrial College), Chengdu University of Information Technology, China
16:55-17:10 C195	Asymmetric Protection based S SFC Deployment for LLM Inference enabled Networks **Hengyu Jin,** Southwest Jiaotong University, China
17:10-17:25 C1173	FedT-DDoS: A Robust and Privacy-Preserving DDoS Detection System for SDIoT Healthcare Environments **Sid Ali MADOUNE,** University of Electronic Science and Technology of China, China
17:25-17:40 C1346	A Cybersecurity Event Reconstruction Framework Considering Source Accuracy and Conflict Validation **Shuaichen Ye,** China Academy of Information and Communications Technology, China
17:40-17:55 C1503	An Efficient Identity-Based Data Auditing Scheme for Cloud-Stored AI Models **Yuyi He,** Zhengzhou Normal University, China
17:55-18:10 C5003	Decentralized Task Offloading in LEO SAGIN via MADRouter **Xiangyi Chen,** Southwest Jiaotong University, China
18:10-18:25 C1428	LS-HRAG: A Lightweight Retrieval-Augmented Generation Framework Based on Lexical and Semantic Hybrid Retrieval **Xucheng Zhu,** School of Computing and Artificial Intelligence, Southwest Jiaotong University, China

Special Session 8

Saturday, December 13, 2025 (UCT+8 Beijing Time)

Integrated AI and Communication Networks Chairman: Assoc. Prof. Huasen He, University of Science and Technology of China, China Assoc. Prof. Shuangwu Chen, University of Science and Technology of China, China	
16:00-18:10	5F Room No. 8 <5 楼 8 号厅>
16:00-16:20 Invited Speech C1163	Secure Positional Modulation for Metasurfaces via Genetic Algorithm with Discrete Phase and Power Constraints **Assoc. Prof. Bo Zhang,** Tianjin Normal University, China
16:20-16:40 Invited Speech	Beyond ADMM: A Unified Client-Variance-Reduced Adaptive Federated Learning Framework **Asst. Prof. Shuai Wang,** University of Electronic Science and Technology of China, China
16:40-16:55 C1380	LLM-Guided DRL for Optimizing Energy Efficiency in Multi-Cluster MEC Networks **Ke Lv,** Beijing University of Posts and Telecommunications, China
16:55-17:10 C156	Enhancing Resilience of Complex Networks against Node Attack: A Constraint Reinforcement Learning Approach for Edge Addition **Yangyang Li,** Information Support Force Engineering University, China
17:10-17:25 C1508	Base Station Service Failure Alarms Prediction in 5G Using BertBSA: A Method Based on BERT Integrated with LightGBM and XGBoost **Yaqiong Liu,** School of Information and Communication Engineering, Beijing University of Posts and Telecommunications, China
17:25-17:40 C8005	Distributed Load Balancing Routing in Hierarchical Mega-Constellations: A Cluster-based Back-Pressure Scheme with Dual-Scale Network Information **Yuanlong Wan,** University of Science and Technology of China,China
17:40-17:55 C1319	Reinforcement Learning-Based Multi-UAV Cooperative Jamming in 3D Environments **Junqi Zhou,** Nanjing University of Aeronautics and Astronautics, China
17:55-18:10 C189	VCFuzz: An Efficient LLM-Guided Fuzzer for Vehicular Communication Protocols **Ruifen Zhao,** Zhejiang Institute of Economics and Trade, China

Poster Session 1

Saturday, December 13, 2025 (UCT+8 Beijing Time)

AI Driven Digital Signal Recognition, Estimation and Processing Technology Chairman: Assoc. Prof. Zhile Li, Southwest China Research Institute of Electronic Equipment, China Assoc. Prof. Hao Wu, National University of Defense Technology, China	
13:00-15:15	5F Room No. 9 <5 楼 9 号厅>
*Note: Please mount your poster on the whiteboard according to the number assigned to your paper ID. 请根据您论文 ID 对应的编号将海报张贴在白板上。	
#1 C1106	A ResKCN-Based Spatial Prediction Method for Complex Interference in SBFD Networks **Yuhan Zhao,** Beijing University of Posts and Telecommunications, China
#2 C122	Virtual Node-Enhanced Distributed Satellite Domain Routing Algorithm **Zhengxuan Huang,** Beijing University of Posts and Telecommunications, China
#3 C1229	SMN: A Novel Automatic Modulation Recognition based on SNN Mamba **Yuepeng Li,** Space Engineering University, China
#4 C1278	Lightweight TF-Transformer for Robust Modulation Recognition in Low-SNR Satellite Communications **Feng Sun,** 32039 Troops of the Chinese People's Liberation Army, China
#5 C1325	IoT-Oriented Open Set Recognition for Discrete Protocol Messages via a Two-Phase Joint Model **Yifan Chen,** Information Engineering University, China
#6 C1376	A Multi-Task Learning Framework for Signal Detection and Modulation Recognition **Lanxin Cui,** China Jiliang University (East Campus), China
#7 C1463	A Comparative Study of Four Machine Learning Algorithms for Predicting TEC During Low-Latitude Ionospheric Disturbance Periods **Mengjia Bai,** Guilin University of Electronic Technology, China
#8 C1511	Node Interaction Energy Network: A Novel Approach to Mitigating Oversmoothing in Graph Neural Networks **Jiajun Lin,** Chengdu University of Information Technology, China
#9 C1476	Design of a Novel Tunable Filter for Cognitive Radio and Its Application Research **Zhile Li,** Southwest China Research Institute of Electronic Equipment, China
#10 C1184	Anti-Jamming Channel Coding Method for OTFS Systems in Low Jamming-to-Signal-Ratio **Dexing Zhan,** University of Science and Technology Beijing, China
#11 C1168	DesignofanImprovedAMPAlgorithmBasedonVariance-AwareAdaptiveRegularizationinOTFS Systems **HuaHong Huang,** Southwest Jiaotong University, China
#12 C1424	Joint Design of Reconfigurable Intelligent Surface Beamforming for Channel Operations

	Xiangyu Ding, Information Support Force Engineering University, China
#13 C1513	Semantic-Driven Joint Source-Channel Coding for Autonomous Driving Video Transmission **Yuilan Yi,** Beijing University of Posts and Telecommunications, China
#14 C1514	Towards Robust Semantic Communication: Compact Token Representation of Images **Xiwen Nie,** Beijing University of Posts and Telecommunications, China
#15 C134	Joint CFO and Channel Estimation for OTFS System in LEO Satellite Communications **Tingguang Zhang,** Army Engineering University of PLA, China
#16 C1105	Dual-Polarized RIS Assisted Super-Resolution DOA Estimation for UAV Communications **Zhuanna Wang,** Northwestern Polytechnical University, Xi'an, China
#17 C1119	Beamforming and DOA Estimation Enabled by Active IRS in Maritime Environments **Qinglong Wen,** Northwestern Polytechnical University, China
#18 C1355	An Improved Radio Environment Map Reconstruction Method Based on Gaussian Kernel Function Weight Driven by Mixed Models **Peng Liming,** Army Engineering University of PLA, China
#19 C1306	Digital Twin-Assisted Blockchain Framework for Spectrum Management in Space-Air-Ground Integrated Network **Huitao Liu,** Beijing Jiaotong University, China
#20 C1104	YO-Swin SemCom: A Novel Complementary Architecture Integrating YOLOv11 Object Detection and Swin Transformer for Efficient Image Semantic Communication **Baohui Han,** College of Communications Engineering, Army Engineering University of PLA, China
#21 C1362	SNR-Adaptive D-SCMA: End-to-End Deep SCMA Detection across Dynamic Channels **Wenjing Ma,** Beijing University of Posts and Telecommunications, China
#22 C155	Task Offloading Optimization for Multi-UAV Collaborative MEC Based on TD3 **Yang Qu,** the NO. 964 hospital of thechinese people's liberation army joint logistics support force, China

Poster Session 2

Saturday, December 13, 2025 (UCT+8 Beijing Time)

Intelligent Image Detection, Recognition and Analysis Methods Chairman: Assoc. Prof. Wei Zou, Soochow University, China	
13:00-15:15	5F Room No. 9 <5 楼 9 号厅>
*Note: Please mount your poster on the whiteboard according to the number assigned to your paper ID. 请根据您论文 ID 对应的编号将海报张贴在白板上。	
#1 C1103	Object Recognition Method in Silicone-Encapsulated Structures Based on Tactile PSS-NET **Xiaolong Guo,** Chongqing University of Posts and Telecommunications, China
#2 C1110	Gas Insulated Switchgear Defect Detection Method Based on Improved RT-DETR **Menghao Huang,** School of Communications and Information Engineering, Chongqing University of Posts and Telecommunications, China
#3 C1176	GLAF:Global and Local Alignment Framework for Text-Based Person Search **Wei Li,** Zhejiang University, China
#4 C1190	A fast aircraft detection method for airport surface based on CUDA technology **Kai Wang,** The 2nd Research Institute Civil Aviation Administration of China, China
#5 C1260	Copper Foil Surface Defect Oriented Long-tailed Object Detection **Zongwei Xia,** Beijing University of Posts and Telecommunications, China
#6 C1192	An Improved Algorithm Based on YOLOv11 for Safety-related Scenarios **Panpan Xu,** Zhengzhou University of Light Industry, China
#7 C1259	Target Recognition Based on Haptic Information **Nian He,** Zhicheng College of Fuzhou University, China
#8 C1359	Research on Improved Swin Transformer-Based Single Object Tracking Algorithms **Weilin Zhou,** PLA Information Engineering University, China
#9 C1450	MaskDiff-TAD: Masked Diffusion Trajectory Imputation for Anomaly Detection **Qi Ouyang,** Information Engineering University, China
#10 C1282	An AI-Enhanced Metalens Array: Co-Design of Nanophotonics and Deep Learning for Wide-Angle Imaging **Zi-Wen Zhou,** Southeast University, China
#11 C1291	Graph Attention on Hasse-based Simplicial Complexes **Hong Wu,** Fudan University, China
#12 C1273	Multi-Robot SLAM Based on Deep Learning for LIDAR Point Cloud Filtering **Yashi Lian,** Army Engineering University of PLA, China

#13 C1172	Infrared Dual-Domain Modeling Transformer for RGB-to-Infrared Image Generation **Xinyi Liu,** Qilu University of Technology (Shandong Academy of Sciences), China
#14 C125	Cheap-Tune: A Low-Resource Framework for Text-to-Video Generation via Single-Video Fine-Tuning of Diffusion Models **Ao He,** Southwestern University of finance and economics, China
#15 C1434	Multimodal RGB-T Image Crowd Counting Network Based on Spatial-Semantic Interaction Module **Zuodong Niu,** Hunan University, China
#16 C1494	Multi-Scale Large Kernel Feature Extraction Network for Efficient Image Super-Resolution **Xin Zhang,** School of Information and Electronic Engineering, Yunnan University, China

Poster Session 3

Saturday, December 13, 2025 (UCT+8 Beijing Time)

New Network Architecture, Resource Management and Network Security Chairman: Assoc. Prof. Salabat Khan, Qilu Institute of Technology, Jinan, China	
16:00-18:15	5F Room No. 9 <5 楼 9 号厅>
*Note: Please mount your poster on the whiteboard according to the number assigned to your paper ID. 请根据您论文 ID 对应的编号将海报张贴在白板上。	
#1 C504	Incentive Mechanism-based Coordinated Jamming Channel and Power Joint Decision-Making Method **Xing He,** Army Engineering University of PLA, China
#2 C506	Divide and Conquer: Hierarchical Learning Based Resilient Anti-jamming Channel Access in Multi-Band Networks **Qiang Ma,** Army Engineering University of PLA, China
#3 C1393	Joint Optimization of Multi-Channel Selection and Transmission Power for Intra-Cluster Communication in UAV Swarms **Tianyao Zhong,** Army Engineering University of PLA, China
#4 C1132	Design of a Priority-Differentiated MAC Protocol for UANETs Based on MAD3QN **Shiqi Lai,** Northwestern Polytechnical University, China
#5 C1357	Beamforming for Multi-Target MIMO DFRC System: Fairness Guarantee and Priority-Weighted Optimization **Xiaotan Li,** Army Engineering University of PLA, China
#6 C1254	Web Spam Detection for the Evolving Web Graph Based on Inductive Learning **Yuanyi Ma,** University of Science and Technology of China, China
#7 C1178	A Meta-Path Based Joint Cross-Domain Kill Web Capability Evaluation Method **Shiyi Fan,** North Automatic Control Technology Institute, China
#8 C8008	LLM-Driven Structural-Semantic Synthesis for XSS Attack Payload Generation **Huizi Song,** University of Science and Technology of China
#9 C8009	TRF: A Robust Traffic Representation Method for Effective Website Fingerprinting Attacks **Jiahui Chen,** University of Science and Technology of China
#10 C8010	FFGIDS: Efficient Flow Feature Graph Learning with Adaptive Recall Compensation for Network Intrusion Detection **Tao Fu,** University of Science and Technology of China
#11 C1330	ARIMA-based flow table prediction and management for stealthy attack mitigation **Ruize Han,** Civil Aviation University of China, China

#12 C1442	GO-MAF: A Human-in-the-Loop Multi-Agent Framework for Self-Healing 5/6G Network Operations **Rui AN,** China Mobile Group Design Institute Co., Ltd, China
#13 C1336	Secure Adaptive Control of Time-Delay Nonlinear Cyber-Physical Systems under FDI Attacks **Yi Zhao,** Shandong Normal University, China
#14 C187	CNSD-YOLO: A Multi-Class Abnormal Behavior Detection Framework for Complex Industrial Workshop Scenarios **Shuming Ying,** Shenyang Institute of Computing Technology, Chinese Academy of Sciences, Shenyang China; University of Chinese Academy of Science, Beijing, China
#15 C1364	A Stability-enhanced Cooperative Optimized Link State Routing Protocol for Flying Ad Hoc Networks **Haodong Pang,** Army Engineering University of PLA, China
#16 C1506	NoCED: A Novel Structure for Network on Chip with the Topology like Traditional Eight Diagrams **Zerun Li,** Intelligent Gaming and Decision-Making Laboratory, China
#17 C1479	A Stochastic Computing-Based Architecture Design for Orthogonal Time Frequency Space Message Passing Detector **Dingjie Yao,** Beijing University of Posts and Telecommunications, China
#18 C1317	Joint Optimization for Relay-Aided Double Hop RISs-Empowered O2I Communications **Xie Xie,** Northwest Institute of Mechanical and Electrical Engineering, China
#19 C1151	TLS-D: An integrated design of TLS protocol with decentralized identification **Xiaotong Chen,** Southwest Jiaotong University, China
#20 C1290	A Key-Aware Joint Wavelength and Routing Resource Allocation Algorithm for QKD Optical Networks **Ziqi Gao,** China Mobile Research Institute, China
#21 C1223	Erasure Code Enhanced UAV Swarm Mission Planning for Critical Data Collection **Maoyuan Wang,** Shandong University, China
#22 C1318	Traffic-Energy Aware Base Station Sleep Control Strategy Based on Deep Reinforcement Learning **Zhangyi Du,** University of Science and Technology of China, China
#23 C8001	D-FOREST: A Decision Transformer-Based Method to Enhance the Robustness and Practicality of Website Fingerprinting Defense **Yang Zhang,** University of Science and Technology of China, China
#24 C1481	Fusing Communication and Computation for 3D Tensor Parallel Training of Large Models **Binwen Luo,** Southwest Jiaotong University, China

Poster Session 4

Saturday, December 13, 2025 (UCT+8 Beijing Time)

AI-enabled Computer Applications & Integrated Communication and Sensing Computing Chairman: Assoc. Prof. Bo Li, Ningxia University, China	
16:00-18:15	5F Room No. 9 <5 楼 9 号厅>
*Note: Please mount your poster on the whiteboard according to the number assigned to your paper ID. 请根据您论文 ID 对应的编号将海报张贴在白板上。	
#1 C1337	Reader Antenna Selection Scheme for Monostatic Backscatter Communications **Xie Xie,** Northwest Institute of Mechanical and Electrical Engineering, China
#2 C1399	Performance Enhancement for Non-Line-of-Sight Ultraviolet Communication Systems **Da-Jiang Ge,** 78156 Army, China
#3 C1165	A Simulation Software Architecture Design Suitable for Multi-agent Aircraft **Xianlong Ma,** Northwestern Polytechnical University, China
#4 C8012	Hybrid Artificial Potential Field based UAV Patrol Inspection for Uncertain Target Events in Obstacle Environments **Suyi Xue,** University of Science and Technology of China, China
#5 C1519	Molecular Diversity Optimization Based on Generative Adversarial Networks and Reinforcement Learning **Yao Luo,** Southwest Jiaotong University, China
#6 C1373	Model Library of Knowledge Accumulation and Sharing in Budget Data Management **Yanmei Li,** Kunlun Digital Technology Co., Ltd., China
#7 C1478	Accuracy-Enhanced Stochastic Self-Attention with Sobol Low-Discrepancy Sequences **Wenjie Li,** Beijing University of Posts and Telecommunications, China
#8 C1215	Applied AI in Healthcare: Enhancing Health Information Access and Community Engagement Through LINE Chatbots for Elderly Users **Yu-Hua Yan,** Tainan Municipal Hospital (Managed by Show Chwan Medical Care Corporation), Taiwan
#9 C1232	Applications of Artificial Intelligence in Taiwan's Healthcare and Health Industry **Yu-Li Lan,** Tzu Chi University Hualien, Taiwan
#10 C8004	Novelty-driven UAV Swarm Target Search based on Multi-Agent Reinforcement Learning **Qun Ma,** University of Science and Technology of China, China
#11 C1169	Dynamic Wartime Material Support for Rooftop Equipment Based on Bi-Objective Coordinated Optimization **Keke Pei,** North Automatic Control Technology Institute, China

#12 C1327	SRIO to DDR4 Processor-Free Hardware Acceleration Path Based on Dual FIFO Buffering Mechanism **Yujie Lei,** Aeronautics Computing Technology Research Institute, China
#13 C1507	Accelerating SPGD-AO Compensation: A High-Performance FPGA-Based Approach for Optical Communication **Jiaming Liang,** Beijing Institute of Technology, China
#14 C1116	Joint Communication-Computation Optimization for High-Density VEC against Frequent Handovers and Service Disruptions **Xiaoying Sun,** Beijing Jiaotong University,China
#15 C197	Federated Learning Based on Dual-side Data Augmentation in Heterogeneous Environment of Railway Internet of Things **Yuchen Jiang,** Lanzhou Jiaotong University, China
#16 C1118	Design and Implementation of an Asynchronous Cyclic Queuing Scheduling Mechanism for Time-Sensitive Networking **Jinghua Zhang,** University of Chinese Academy of Sciences, China
#17 C1431	SAP-CORA: Security-Aware PPO for Cooperative Resource Allocation in IoV Networks **Yifei Li,** University Of International Relations, China
#18 C1239	Performance Analysis of GDOP-Based Satellite Selection Methods for LEO Constellations **Bohan Zhang,** Army Engineering University of PLA, China
#19 C1274	RPF: A Hierarchical Risk-Aware Provisioning Framework for Cost-Efficient Cloud–Edge Collaboration **Tianfeng Ma,** China United Network Communications Group Co., Ltd., China
#20 C1486	GSTA-Net Knowledge Graph Driven Spatio-Temporal Attention Model **Wen Zhang,** Chengdu University of Information Technology, China

Special Session 7

Sunday, December 14, 2025 (UCT+8 Beijing Time)

Millimeter-Wave Radar Technology and Applications Chairman: Assoc. Prof. Peng Chen, Southeast University, China	
13:00-15:10	3F Room No. 3 <3 楼 3 号厅>
13:00-13:20 Invited Speech	An Efficient Covariance Matrix Reconstruction Method for Robust Adaptive Beamforming **Assoc. Prof. Peng Chen,** Southeast University, China
13:20-13:40 Invited Speech C1128	Semi-supervised Incremental Learning Framework with Uncertainty Assessment Mechanism for Radar Target Recognition **Assoc. Prof. Haohao Ren,** University of Electronic Science and Technology of China, China
13:40-13:55 C1187	Residual Encoding-Based Compression Method for Point Clouds Of Extended Targets **Zihang Li,** Southeast University, China
13:55-14:10 C1180	Efficient SOMP Algorithm Implement on FPGA for DOA Estimation **Xiang Li,** State Key Laboratory of Millimeter Waves, Southeast University, China
14:10-14:25 C1267	MAE-WGAN: A Multi-Attention Enhanced WGAN Framework for LPI Radar Signal Recognition **Zheng Qi,** China Jiliang University (East Campus), China
14:25-14:40 C7002	Optimized Sparse Bayesian Learning for Two-Dimensional Direction-of-Arrival Estimation **Zhuoxin Li,** Southeast University, China
14:40-14:55 C1261	Research on OFDM Subcarrier Extraction and Reconstruction Method Based on Multi-Rate Filtering for 5G Radar **Peiyuan Hui,** Xi'an University of Posts and Communications, China
14:55-15:10 C7001	A Wideband Time-Domain Beamforming Algorithm Employing Chebyshev Weighting **Xuan Wang,** Southeast University, China

Oral Session 8

Sunday, December 14, 2025 (UCT+8 Beijing Time)

Advanced Electronic Systems and Antenna Design Chairman: Assoc. Prof. Gong Chen, Chengdu University of Information Technology, China	
13:00-15:55	3F Room Yuerong Hall <3 楼悦蓉厅>
13:00-13:20 Invited Speech	Network Resiliency: From Classical Communication Networks to Quantum Communication Networks **Asst. Prof. Qiaolun Zhang,** Politecnico di Milano, Italy
13:20-13:40 Invited Speech	Overview of Recent High-Speed, High-Accuracy ADC Design Trends **Assoc. Prof. Gong Chen,** Chengdu University of Information Technology, China
13:40-13:55 C1438	Cross-regional fiber optic co-trench positioning LLM: bypass fusion method and verification **Wenxin Liu,** Beijing University of Posts and Telecommunications, China
13:55-14:10 C188	KAE: A Kolmogorov-Arnold autoencoder designed for end-to-end learning in Z-interference channel **Liang Guo,** China Electric Power Research Institute, China
14:10-14:25 C1131	High-speed pipelined ADC architecture for digital signal self-calibration based on the single-event transient (SET) phenomenon **Minrui Du,** Chengdu University of Information Technology，China
14:25-14:40 C505	Design of a 664GHz Schottky diodes Harmonic Mixer with Hollowed Substrate **Ziyang Na,** Taiyuan University of Technology, China
14:40-14:55 C167	Design of an Ultra-wideband Multilayer Vertical Interconnect structure based on TGV technology **Wang Shuhuai,** Southwest China Institute of Electronic Technology, China
14:55-15:10 C1457	Research on the Application of Non-Binary LDPC Codes in QLC-ReRAM **Jiehao Zhang,** Huaqiao University, China
15:10-15:25 C1382	Multi-Level Frame Preemption Mechanism for TSN Based Avionics Systems **Nan Liu,** Hangzhou International Innovation Institute of Beihang University, China
15:25-15:40 C1516	Modeling of Entanglement in a Josephson Traveling-Wave Parametric Amplifier by a Novel Lie Algebra Approach **Yongjie Yuan,** Technical University of Munich, Germany
15:40-15:55 C1161	Neural RAKE Receiver for WCDMA System **Hang Wang,** Beijing University of Posts and Telecommunications, China

Oral Session 9

Sunday, December 14, 2025 (UCT+8 Beijing Time)

Target Detection and Pattern Recognition Chairman: Assoc. Prof. Bo Li, Ningxia University, China	
13:00-15:15	5F Room No. 6 <5 楼 6 号厅>
13:00-13:15 C1391	Identification of vehicles based on driver cab features **Zuchun Ding,** Guangzhou College of Technology and Business, China
13:15-13:30 C1205	Motion-aware Topology Prototypical Network for Skeleton-based Action Recognition **Kunlun Wu,** Southwest Jiaotong University, China
13:30-13:45 C126	A UAV Multitarget Tracking Method Based on Complex Outdoor Scenes **Hao Chen,** Beijing University of Posts and Telecommunications, China
13:45-14:00 C1213	A Multi-Object Tracking Framework Integrating Gait Features **Jianhua Xie,** Shijiazhuang Campus, Army Engineering University of PLA, China
14:00-14:15 C1328	Research on Traffic Sign Recognition under Partial Occlusion Based on Deep Learning **Zhanfei Cao,** Beijing Institute of Graphic Communication, China
14:15-14:30 C1352	Lightweight Object Detection Models for Edge Devices: A Hardware-Efficient Approach **Weijie Cai,** Shenzhen University, China
14:30-14:45 C1288	KAT-ReID: Assessing the Viability of Kolmogorov–Arnold Transformers in Object Re-Identification **Muhammad Umair,** University of Electronic Sciecne and Technology China, China
14:45-15:00 C1196	Research on Personal Navigation Algorithm Based on IMU and ZUPT **Zhangfeng Ju,** North Automatic Control Technology Research Institute, China
15:00-15:15 C1366	Enhancing Road Slope Detection with Generative Models and Vision-Language Models for Infrastructure Safety **Xinyu Zheng,** Tongji University, China

Oral Session 10

Sunday, December 14, 2025 (UCT+8 Beijing Time)

Computer Vision and Intelligent Image Processing Chairman: Assoc. Prof. Yi Zhao, Chang' an University, China	
13:00-15:35	5F Room No. 7 <5 楼 7 号厅>
13:00-13:20 Invited Speech	Principle and Key Applications of Diffusion Generative Models **Assoc. Prof. Yi Zhao,** Chang' an University, China
13:20-13:35 C138	A Multi-Sensor Fusion Fall Detection System with Attention-Enhanced Bidirectional Gated Recurrent Unit **Gean Chen,** Beijing University of Posts and Telecommunications, China
13:35-13:50 C1175	ElbowHack: Video-assisted PIN Inference Through Elbow-Forearm Dynamics Analysis **Bo Yin,** University of Electronic Science and Technology of China, China
13:50-14:05 C1263	Fast Optical Phased Array Calibration Using a Hybrid GS-SPGD Algorithm **Yanlin Chen,** University of Science and Technology of China, China
14:05-14:20 C148	Can Image Quality Assessment Help Medical Image Segmentation? **Dewei Yi,** University of Aberdeen, United Kingdom
14:20-14:35 C1320	Task-Aware Remote Sensing Image Semantic Segmentation via Multi-Layer Semantic Fields and Adaptive Decoding **Shixing Zhang,** University of Electronic Science and Technology of China, China
14:35-14:50 C1356	Multi-Kernel Aggregation Network for Hyperspectral Image Classification **Ruifeng Chen,** Guangxi University, China
14:50-15:05 C1480	Dual-Attention Enhanced Diffusion-Based Medical Image Diagnosis **Hang Zhou,** South China Normal University, China
15:05-15:20 C1475	LAFEN: A Lightweight Adaptive Feature-Enhancement Network for Dam Crack Segmentation **Bingmeng Zhu,** Chengdu University of Technology, China
15:20-15:35 C1460	Multi-ModalFeatureSynergyinDual-Stream NetworkswithCross-AttentionforAction Recognition **Zhitong Liu,** Shenyang University of Technology, China

Oral Session 11

Sunday, December 14, 2025 (UCT+8 Beijing Time)

Image Modelling and Multimedia Application Technologies Chairman: Assoc. Prof. Yong Jia, Chengdu University of Technology, China	
16:10-18:10	3F Room No. 3 <3 楼 3 号厅>
16:10-16:25 C1143	Prompt Engineering and Prior Visual Knowledge Integration for Visual-Language Model-Based Substation Bird Nest Detection **Xian Qu,** China Southern Power Grid Technology Co., Ltd., China
16:25-16:40 C1333	Towards Perceptual Fidelity: KDE-Peak-Based JND Modeling for Point Cloud Attribute Compression **Mengting Yu,** Northwestern Polytechnical University, China
16:40-16:55 C1365	Impact of Poisson Surface Reconstruction on Quality Assessment of Compressed Point Clouds **Zhang Chen,** Northwestern Polytechnical University, China
16:55-17:10 C1321	RDA-CycleGAN: Residual Dense Attention-guided CycleGAN for Clutter Suppression in GPR Pavement Interlayer Distress Images **Xinru Wang,** Chengdu University of Technology, China
17:10-17:25 C1195	Toward Semantic Enriched Video Description via Dynamic Segmentation and Keyframe Enhancement **Jiayi Zhang,** Beijing University of Posts and Telecommunications, China
17:25-17:40 C165	Ghost-free multi-exposure Fusion Algorithm via Dual-Weight strategy **Yin Gao,** Quanzhou Institute of Equipment Manufacturing, Chinese Academy of Sciences, China
17:40-17:55 C1299	AC-UNet: An Enhanced UNet for Multi-Class Signal Segmentation **Yufan Liu,** Beijing Institute of Technology, China
17:55-18:10 C116	Subcultural Symbols and Climate Action: Visual Storytelling Strategies on Bilibili Short Videos **Yuhan Wang,** Northeast Forestry University, China

Oral Session 12

Sunday, December 14, 2025 (UCT+8 Beijing Time)

LLM-Based Computer Systems and Software Design Chairman: Dr. Lufeng Yuan, Beijing China-Power Information Technology Co., Ltd, China	
16:10-18:30	3F Room Yuerong Hall <3 楼悦蓉厅>
16:10-16:30 Invited Speech C1504	An Intelligent Data Query Tool for Power Business Based on the Collaboration of Large and Small Models **Dr. Lufeng Yuan,** Beijing China-Power Information Technology Co., Ltd, China
16:30-16:45 C166	Priority-Based Container Scheduling for Serverless Edge Computing **Yuping Duan,** Beijing University of Posts and Telecommunications, China
16:45-17:00 C1189	Containerized and Host-Based RDBMSs Performance Comparison **Ittipon Rassameeroj,** Mahidol University, Thailand
17:00-17:15 C1444	A Dynamic Threshold-Based Optimized SCL Decoding Algorithm for ReRAM **Geyan Bao,** Huaqiao University, China
17:15-17:30 C1485	MemTrack: Unified, Thread-Safe Instruction-Level Memory Tracing for Architecture-Neutral Optimization **Peng Wang,** Inspur Group Co., Ltd., China
17:30-17:45 C1322	Multi-granularity Dual-channel CLIP for Long Texts **Xuan Wang,** Beijing University of Posts and Telecommunications, China
17:45-18:00 C1445	An Example-Enhanced and Iteratively Refined Text-to-SQL Framework with Dual-Path Revision **Yanling Chen,** Huaqiao University, China
18:00-18:15 C1446	Dual-Pattern Decomposition and Python Intermediate Layer for Reliable NL2SQL **Zupei Huang,** Huaqiao University, China
18:15-18:30 C1433	Design and Implementation of Test Vector Generation Graphic System Based on D Algorithm **Wang Cheng,** Army Engineering University, China

Oral Session 13

Sunday, December 14, 2025 (UCT+8 Beijing Time)

Next-Generation Artificial Intelligence Technologies and Applications Chairman: Asst. Prof. Xiangyi Chen, Southwest Jiaotong University, China	
16:10-18:15	5F Room No. 6 <5 楼 6 号厅>
16:10-16:30 Invited Speech	Model Migration in Digital Twin-Empowered Vehicular Edge Computing **Asst. Prof. Xiangyi Chen,** Southwest Jiaotong University, China
16:30-16:45 C114	Quantifying Macro and Micro-Level predictors on Consumption Expenditure using Bayesian Linear Regression approach **Ong Thian Song,** Multimediia University, Malaysia
16:45-17:00 C1351	HATS: High-Accuracy Triple-Set Watermarking for Large Language Models **Zhiqing Hu,** Institute of Computer Application, China Academy of Engineering Physics, China
17:00-17:15 C1313	Enhancing Prediction of Student's Performance via Imbalanced Graph Learning **Weiyi Wen,** Nanjing University of Finance & Economics, China
17:15-17:30 C1149	Evaluation of an SDN-Based Aeronautical Broadband Communication System for Multi-Service QoS Assurance **Tao Fang,** Civil Aviation University of China, China
17:30-17:45 C1208-A	A Framework for Data Governance and Privacy in Saudi Arabia: Aligning PDPL with Vision 2030Digital Transformation **Abdulaziz Alshammari,** Imam Mohammad Ibn Saud Islamic University, Saudi Arabia
17:45-18:00 C1182	Event-Driven Traffic Congestion Prediction Based on Multimodal Dataset **Wei Yang,** University of Science and Technology of China, China
18:00-18:15 C1361	Environment-Fused Neural Reconstruction of Low-Altitude 3D Radio Maps from Sparse Measurements **Ran Gao,** Shanghai University, China

Special Session 11

Sunday, December 14, 2025 (UCT+8 Beijing Time)

Computer-Aided Intelligent Manufacturing and Optimization Control Technology Chairman: Assoc. Prof. Beibei Li, Shenyang Institute of Computing Technology, Chinese Academy of Sciences, China	
16:10-18:45	5F Room No. 7 <5 楼 7 号厅>
16:10-16:30 Invited Speech	Research and Application of Key Technologies for Integrated Equipment Systems for Subsea Energy Infrastructure Inspection Based on Unmanned Surface Vessel (USV) Robots **Prof. Yikang Chen,** China Southern Power Grid, China
16:30-16:45 C184	A Sim-to-Real Few-Shot Object Detection Framework for Multi-Class Industrial Part Grasping **Yating He,** Shenyang China; University of Chinese Academy of Science, Beijing, China
16:45-17:00 C1518	A G3 continuous toolpath smoothing method under monotonic curvature constraint for five-axis CNC machining **Yifan Zhang,** Yantai University, China
17:00-17:15 C1489	Graph-based Robust Cubature Kalman filter for Power System State Estimation **Jinhui Hu,** Southwest Jiaotong University, China
17:15-17:30 C137	Three-Loop PID Parameters Auto-Tuning for Ball-Screw-Driven PMSM Servo Systems Based on LinuxCNC **Luan Haoxuan,** Shenyang institute of computing technology University of Chinese Academy of Sciences, China
17:30-17:45 C1447	Efficient Sampling Optimization for Robot Diffusion Policy **Jing Li,** Huaqiao University, China
17:45-18:00 C1459	Adaptive Lighting Control in Visible Light Systems: An Integrated Sensing, Communication, and Illumination Framework **Xinyan Xie,** Fudan University, China
18:00-18:15 C1464	ComboS: Combining State Measurement with DR-Sketch for Adaptive Heavy Hitter Detection **Deyu Zhao,** School of Cyber Science and Engineering, Southeast University, China
18:15-18:30 C1222	A Stackelberg Game Model for Incentivizing Civil Aviation Data Sharing **Bolin Chen,** Civil Aviation of China, China
18:30-18:45 C171	Development of a Recommender System for Office Buildings Using Collaborative Filtering **Beibei Li,** Shenyang Institute of Computing Technology, Chinese Academy of Sciences, China

Online Session 1

Sunday, December 14, 2025 (UCT+8 Beijing Time)

Pattern Recognition Chairman: Assoc. Prof. Mengmeng Liao, Shanghai University, China	
13:00-15:15	Zoom A: 819 0941 6703
13:00-13:15 C1185	Recurrent Neural Network on Human Activity Recognition Based on Latent State Space **Jie Wu,** Jishou University, China
13:15-13:30 C1495	Adaptive Motion Feature Integration for Action Recognition **Yi Xiao,** Sun Yat-sen University, China
13:30-13:45 C1334	Temporal-Enhanced Multi-Branch Graph Convolution Network For Human Action Recognition **Shihao Feng,** Shenyang Institute of Computing Technology, Chinese Academy of Sciences, Shenyang, Liaoning, China
13:45-14:00 C121	Gearbox Fault Diagnosis Based on Two-Stream Convolutional Neural Network and Improved Least Squares Support Vector Machine **Jiajun Li,** University of Chinese Academy of Sciences, Beijing, China
14:00-14:15 C1458	ViCAN: Video-Oriented Visible-Infrared Cross-Modal Person Re-ID with Dual-Stream Attention **Qiuting Lu,** Fuzhou University, China
14:15-14:30 C1312	Anxiety and Depression Recognition Based on Electrocardiogram Signals **Jiakang Xu,** Southwest University, China
14:30-14:45 C503	Behavioral Anomaly Detection Based on Embedded Vision **Xu Liu,** University of Chinese Academy of Sciences, China
14:45-15:00 C204	DETU-Net: An Improved TransUNet with Dual-Branch for Right Ventricle MRI Segmentation **Yu Fu,** Shenyang University of Technology, China
15:00-15:15 C1430	BNU Student Visual Interactive Behaviour Dataset **Minglin Hong,** School of Artificial Intelligence, Beijing Normal University, China

Online Session 2

Sunday, December 14, 2025 (UCT+8 Beijing Time)

Target Detection and Tracking Chairman: Prof. Zheng Dong, Shandong University, China	
13:00-15:30	Zoom B: 889 1235 9993
13:00-13:15 C159	YOLOv8 Target Detection Integrated SiamRPN Model for Enhanced Target Tracking **Yapeng Wang,** Zhongyuan University and Technology, China
13:15-13:30 C193	DSS: A Time-Aware Model for Accurate Persistence Tracking **Yiwen Wu,** University of Science & Technology of China, China
13:30-13:45 C7003	Deep CNN-Based U-Net Framework for Accurate Human Detection in Complex Through-the-Wall Scenarios **Zakeen Ahmad,** Southeast university, China
13:45-14:00 C111	Semantic-Aware Adaptive Denoising for Robust Nighttime Vehicle Detection and Tracking **Tianyue Sun,** Army Academy of Armored Forces, China
14:00-14:15 C1155	Self-Adaptive Vision Repair: Handling RGB Failures in Autonomous Driving Systems **Yong Xie,** Huzhou University, China
14:15-14:30 C1377	Saliency Enhancement and Redundancy Suppression for RT-DETR on UAV aerial images **Xiao Xiao,** Beijing Institute of Technology, China
14:30-14:45 C1471	MCViT-YOLO: Small Traffic Sign Detection Based on Multi-Scale Feature Contrastive Regularization **Xingdao Hu,** South China Normal University, China
14:45-15:00 C7004	An Indoor Moving Personnel Detection Algorithm Based on Adaptive DBSCAN **Xinsheng Zhu,** Northwestern Polytechnical University, China
15:00-15:15 C1358	Research on tongue segmentation model based on DINOv3 self-supervised pre-training and multi-task suffix encoder **Funing Zhang,** Shenyang Institute of Computing Technology Chinese Academy of Sciences, Shenyang, China & University of Chinese Academy of Sciences, Beijing, China
15:15-15:30 C1417	Image Denoising Algorithm Based on a Parallel Lattice Boltzmann Model **Yuqi Chen,** Nanjing Tech University, China

Online Session 3

Sunday, December 14, 2025 (UCT+8 Beijing Time)

Digital Image Analysis and Computer Vision Chairman: Dr. Xu Sen, Shenyang University of Chemical Technology, Key Laboratory of Industrial Intelligence Technology on Chemical Process of Liaoning Province, China	
13:00-15:45	Zoom C: 872 3009 7202
13:00-13:15 C1266	Meteorological Visibility Estimation Through Multi-Modal Feature Fusion with Convolutional and Frequency Domain Representations **Wong Kwok Wai,** Department of Computer Science, Hong Kong Chu Hai College, Hong Kong, China
13:15-13:30 C115	Cross frequency spatial attention based motion blur restoration algorithm for aerial images **Wenyi Wu,** University of Chinese Academy of Sciences, China
13:30-13:45 C1156	Research on Optimizing Digital Human Video through Adaptive Rendering **Yanyu Qin,** Shenyang Institute of Computing Technology, Chinese Academy of Sciences, China
13:45-14:00 C1157	Hierarchical Image Deraining Network with Enhanced Rain-Streak Perception **Xinming Wang,** Shenyang Institute of Computing Technology, University of Chinese Academy of Sciences, Chinese Academy of Sciences, China
14:00-14:15 C117	Region-Relation Enhanced GNN-CNN for Image Classification **Yanglun Lei,** Wuhan University of Science and Technology, China
14:15-14:30 C1171	LLE-Fusion: A lightweight low-light enhancement and fusion network for infrared and low-light visible light fusion **Zhan Sheng,** University of Chinese Academy of Sciences, China
14:30-14:45 C1403	Progressive Cross-dimensional Synergy Network for Infrared Image Destriping **Fanlei Meng,** Beijing Information Science & Technology University, China
14:45-15:00 C1512	A Hybrid Attention-Guided Method for Old Photo Restoration **Junwei Liu,** Shenyang Institute of Computing Technology, Chinese Academy of Sciences, Shenyang, China; University of Chinese Academy of Sciences, Beijing, China
15:00-15:15 C1349	AI-Based Evaluation of Transfer Learning Strategies for Robust Histopathology Image Classification **Cosmin Stoica-Spahiu,** University of Craiova, Romania
15:15-15:30 C1188	YOLOv11n-RDF: A Detail-Enhanced YOLOv11n with Low-Level Feature Fusion for Damper Detection **Can Chen,** University of Chinese Academy of Sciences, China
15:30-15:45 C1114	A Saliency Detection Method via Frequency Space **Ronghe Wang,** China Academy of Electronics and Information Technology, China

Online Session 4

Sunday, December 14, 2025 (UCT+8 Beijing Time)

Intelligent Detection Models and Defect Detection Chairman: Dr. Haicheng Tao, Nanjing University of Finance & Economics, China	
13:00-16:00	Zoom D: 847 0940 6734
13:00-13:15 C1440	Face Rectification for Automatic ID Photo Generation **Jianing Weng,** Fuzhou University, China
13:15-13:30 C108	Improved YOLOv8-Based Surface Defect Detection for Aluminum Alloy Profile **Xiaoyu Li,** University of Chinese Academy of Sciences, China
13:30-13:45 C1123	YOLOv12n-SCCOKN: An Improved Model for Detecting Small Electrical Devices in Complex Substation Backgrounds **Jiawei Shi,** University of Chinese Academy of Sciences, China
13:45-14:00 C1139	CRSDet: A Small Object Detector with Cross-Scale Response and Selective Detection Integration **Yaxin Gao,** Shenyang Institute of Computing Technology Chinese Academy of Sciences, China
14:00-14:15 C1174	YOLOv10-GSBi: A Lightweight Detection Model for Pointer Instrument **Zihan Guo,** University of Chinese Academy of Sciences, China
14:15-14:30 C1248	Steel Surface Defect Detection Algorithm Based on Improved RT-DETR **Youlin Chai,** University of Chinese Academy of Sciences, China
14:30-14:45 C1281	An Improved YOLOv11-Based Method for Weld Defect Detection **Fuping Zhang,** Shenyang Institute of Computing Technology Chinese Academy of Sciences, University of Chinese Academy of Sciences, China
14:45-15:00 C182	MCP-YOLO: Lightweight Detection Method for Pointer Instruments **LongQing Fang,** University of Chinese Academy of Sciences, China
15:00-15:15 C1147	Joint Detection–Segmentation Multi-Scale Network for Accurate Recognition of Sub-2 mm Crane Wheel Tread Defects under Harsh Lighting **Qingfang Zhang,** University of Chinese Academy of Sciences, China
15:15-15:30 C1406	Semantically Enhanced Image Captioning for Transmission Line Ice **Wei Yajie,** School of Information Science and Engineering, Hebei University of Science and Technology, China
15:30-15:45 C1421	Improved YOLOv11 with RFAConv and ASFF Fusion for Photovoltaic Panel Defect Detection **Haijie Chen,** Shenyang Institute of Computing Technology Chinese Academy of Sciences, University of Chinese Academy of Sciences, China
15:45-16:00 C1348	Multi-Feature Interactive Network for Real-Time Salient Detection of Welding Defects **Yuran Guo,** Shenyang Institute of Computing Technology, Chinese Academy of Sciences, China

Online Session 5

Sunday, December 14, 2025 (UCT+8 Beijing Time)

Model-Based Prediction Algorithms and Intelligent Computing Chairman: Dr. Yan Li, University of Nottingham, Ningbo, China	
13:00-15:15	Zoom E: 898 6687 5208
13:00-13:15 C1152	Long-term Prediction of Ozone Concentration Based on GAT-xLSTM **Xueying Li,** Shenyang institute of computing technology, Chinese academy of sciences, China
13:15-13:30 C1137	IceFormer: A Dual Attention Network for Transmission Line Icing Prediction **Jinqiang He,** Electric Power Research Institute, China Southern Power Grid Corporation, China
13:30-13:45 C1499	Reliable Prediction and Interpretation of CancerDrug Sensitivity via CatBoost with Cell Line- andDrug-Aware Validation **Dhekra Saeed,** Soutwest Jiaotong University, China
13:45-14:00 C1275	Research on Contour Error Prediction of Five-Axis CNC Machine Tools Based on CLA-Net **Juntao Li,** Shenyang Institute of Computing Technology, Chinese Academy of Sciences. University of Chinese Academy of Sciences, China
14:00-14:15 C1146	Cloud Computing Load Prediction Strategy Based on Brain-Inspired LSTM Model **Kai Li,** The 54th Research Institute of China Electronics Technology Group Corporation, China
14:15-14:30 C1166	Research on Resource Consumption Prediction for Local LLM Based on Time Series Forecasting **Zhong Jie,** Shenyang Institute of Computing Technology, Chinese Academy of Sciences Shenyang, China
14:30-14:45 C1209	A Short-term Wind Power Prediction Method Based on The Optimized Hybrid Model **Xiao Han,** Shenyang Institute of Computing Technology, Chinese Academy of Sciences, China
14:45-15:00 C1150	Research on Electricity Price Forecasting Based on CH-Informer Time Series Model **Sentai An,** University of Chinese Academy of Science, China
15:00-15:15 C1354	Research on Message Aggregation for Shooting Competition Scores Based on Adaptive Window Prediction **Ledan Qin,** University of Chinese Academy of Sciences, China

Online Session 6

Sunday, December 14, 2025 (UCT+8 Beijing Time)

Computer Models and Optimization Algorithms Chairman: Dr. Yanyun Gong, Northwestern Polytechnical University, China	
16:10-18:40	Zoom A: 819 0941 6703
16:10-16:25 C1323	Research on an Improved Seagull Optimization Algorithm in Three-Dimensional Path Planning **Yuanjing Ma,** College of Science, Shenyang Ligong University, China
16:25-16:40 C1197	Adaptive GNN-Based Scheduling of Serverless Workflows in Dynamic Edge Environments **Lecheng Liao,** University of Science and Technology of China, China
16:40-16:55 C1387	Deployment of Cloud Container Clusters via Algorithmic Capsules **Yuqing Lin,** Liaocheng University Dongchang College, China
16:55-17:10 C1115	TWHD: An Algorithm of Traveling Companion Discovery Based on Spatio-temporal Trajectory **Jiashuai Zhang,** China Unicom Data Intelligence Co., Ltd., China
17:10-17:25 C1136	Diversity-Enhanced Hierarchical PSRO with Exploration for Complex Game Optimization **Ying Teng,** Shaanxi Normal University, China
17:25-17:40 C1289	A GCL-aware Cooperative Adaptive Algorithm for TSN Scheduling Optimization **Lianpan Chi,** Shenyang University, China
17:40-17:55 C147	MolCUE: A Multi-modal Framework for Language-Guided Molecule Understanding and Editing **Yunpeng Liu,** University of Chinese Academy of Sciences, China
17:55-18:10 C130	Research on an Intelligent Caching and Rendering Optimization Strategy for AIGC Visualization Platforms **Ningning Xie,** University of Chinese Academy of Sciences, China
18:10-18:25 C1378	Graph Neural Network Recommendation Algorithm Based on Frequency, Time and Location **Qingbo Sun,** Shandong University Of Political Science And Law, China
18:25-18:40 C1340	Design and Implementation of a Shooting Training Program Recommendation System Based on Graph Neural Networks **Chengzhi Li,** University of Chinese Academy of Sciences, China

Online Session 7

Sunday, December 14, 2025 (UCT+8 Beijing Time)

Multimodal NLP and Intelligent Question Answering Systems Chairman: Dr. Isma Hamid, National textile University, Faisalabad, Pakistan	
16:10-18:45	Zoom B: 889 1235 9993
16:10-16:30 Invited Speech	A Segment-Level Contextual Embedding Approach for Depression Detection Sarcastic Text **Dr. Isma Hamid,** National textile University, Faisalabad, Pakistan
16:30-16:45 C157	RAKR: A Reflection-based Agent for Adaptive Knowledge Rewriting Technology Applied to Knowledge Graph Question Answering **Xinyan Shao,** Shenyang Institute of Computing Technology, Chinese Academy of Sciences / University of Chinese Academy of Sciences, China
16:45-17:00 C1162	A Large Language Model for Hybrid Table-and-Text Question Answering Based on a Dynamic Chain Reasoning Framework **Yongzeng Zhang,** Traffic Control Technology Co., Ltd., China
17:00-17:15 C168	QSE-QA: A Question Space Expansion Framework for Creative and Diverse Answer Generation **Zhikai Mi,** Shenyang Institute of Computing Technology Chinese Academy of Sciences; University of Chinese Academy of Sciences, China
17:15-17:30 C1329	Sentiment Analysis of Real Time News and Emotion Analysis of Comments on social media by using Deep Learning **Isma Hamid,** National textile University, Faisalabad, Pakistan
17:30-17:45 C173	An End-to-End System for Culturally-AttunedDriving Feedback using a Dual-Component NLG Engine **Iniakpokeikiye Peter Thompson,** University of Aberdeen, UK
17:45-18:00 C1404	EduBART-A Large-Model-Based Dialogue System for Ideological Education **Yu Guo,** Guangzhou Songtian Polytechnic College, China
18:00-18:15 C144	BellTeus: Call center performance evaluation system using the Large Language Model **Alessandro Chincha,** Peruvian University of Applied Science, Peru
18:15-18:30 C1217	Leveraging Knowledge-Enhanced Large Language Models for Sports Psychology: A RAG-Based Framework and Quantitative Evaluation **Wenjun Zhang,** University of Chinese Academy of Sciences, China
18:30-18:45 C1130	Intelligent Question Answering Method for Vertical Fields by Integrating Large Models and Knowledge Graphs **Kanjing Li,** Beijing Institute of Computer Technology and Application, Nanjing University of Aeronautics and Astronautics, China

Online Session 8

Sunday, December 14, 2025 (UCT+8 Beijing Time)

AI for Sciences, Engineering, and Technologies Chairman: Assoc. Prof. Mansoor Khan, Qilu Institute of Technology, China	
16:10-18:55	Zoom C: 872 3009 7202
16:10-16:25 C3001	A Hierarchical Multi-Agent Framework for Improved Clinical Diagnosis **Fuzhe Zhang,** Shenyang and Institute of Computing Technology, Chinese Academy of Sciences, China
16:25-16:40 C1258	DeepSeek-R1 Enhanced Adaptive RAG Framework for Intelligent Optimization of Titanium Alloy Melting-Casting Processes **Binglong Ji,** University of Chinese Academy of Science, China
16:40-16:55 C1521	Design and Implementation of a Real-Time Multi-Source Heterogeneous Data Processing Engine for Shooting Sports Scoring Systems **Guangkuo Wang,** Shenyang Institute of Computing Technology Chinese Academy of Sciences Shenyang, China; University of Chinese Academy of Sciences Beijing, China
16:55-17:10 C1461	Architectural Design of a Big Data and AI Agent Platform for Elite Performance Analytics in Shooting Sports **Guoqing Chen,** University of Chinese Academy of Sciences, China
17:10-17:25 C190	MedFusion-R1-7B: Task-Decoupled Distillation Framework for Multi-Task Medical LLMs **Daang Cheng,** University of Chinese Academy of Sciences, China
17:25-17:40 C1402	Research on Stroke NIHSS Grading Application Based on the Improved BERT Model **Ting Xie,** Dalian Neusoft University of Information, China
17:40-17:55 C205	Design and Implementation of Agent-based CNC Fault Diagnosis System **Zhaoyuan Wu,** Shenyang institute of computing technology Chinese academy of sciences, China
17:55-18:10 C1181	Performance Evaluation of CNC System Trajectory Interpolation Using LSTM and Fuzzy Comprehensive Evaluation **Qu Liang,** University of Chinese Academy of Sciences, China
18:10-18:25 C1243	Deep Reinforcement Learning for Multi-Task Control of USVs: Area Anchoring, Docking, and Obstacle-Avoidance Navigation **Tianshuo Zhang,** Huzhou University, China
18:25-18:40 C1183	Flexible Job Shop Scheduling via DAKF-CrossDAN Based Reinforcement Learning **Ma Zhiqiang,** Shenyang Institute of Computing Technology, Chinese Academy of Sciences, China
18:40-18:55 C511	Smart Waste Management Using EGrab-Bot 2.0: An AI and Robotics-Based Approach **Wilber B. Sabado,** University of Makati Taguig City, Philippines

Online Session 9

Sunday, December 14, 2025 (UCT+8 Beijing Time)

Data Science and Knowledge Engineering Chairman: Assoc. Prof. Kun Xu, Information Support Force Engineering University, China	
16:10-18:40	Zoom D: 847 0940 6734
16:10-16:25 C1520	Research on Regression Model of Fire Occurrence Probability Based on Bayesian Theorem for Meteorological Data **Zhenpeng An,** Shenyang Fire Science and Technology Research Institute of MEM, China
16:25-16:40 C1257	A Spatial-Temporal Decoupling Framework with Rectified Flow for Cellular Traffic Data Imputation **Songwen Xu,** Nanjing University of Science and Technology, China
16:40-16:55 C1314	YOLO-based and DCNN Fusion for Urban Traffic Congestion Prediction **Yuxiang Chen,** Xi'an University of Technology, China
16:55-17:10 C1339	Cross-modal Semantic Alignment Network for Knowledge Extraction in Educational Resources **Zhiyang Lu,** Shenyang Institute of Computing Technology, Chinese Academy of Science University of Chinese Academy of Science, China
17:10-17:25 C1270	Prediction of competition intensity for postgraduate admission via integrated time series modelling **Jiaxin Mao,** Sichuan University of Science & Engineering, China
17:25-17:40 C1164	Redis-Based High-Concurrency Optimization for a Shooting Results System **Linwei Hu,** Shenyang Institute of Computing Technology Chinese Academy of Sciences Shenyang, China
17:40-17:55 C1456	Book Borrowing Volume Prediction of Local University Based on Flexible Neural Tree **Bin Yang,** Zaozhuang University, China
17:55-18:10 C1425	Zero-Shot Curriculum Knowledge Graph Construction via LLMs **Zhenhua You,** University of Chinese Academy of Sciences, China
18:10-18:25 C210	A Pluggable Two-Stage Compression Framework for CNC Time-Series Data: A Case Study on Data-Driven Delta Encoding Optimization **Yuen Shao,** Shenyang Institute of Computing Technology, Chinese Academy of Sciences, China
18:25-18:40 C1401	A Graph-Enhanced Late Interaction RAG for Efficient Multi-Hop Retrieval **Yao Chen,** University of Science and Technology of China, China

Online Session 10

Sunday, December 14, 2025 (UCT+8 Beijing Time)

Text Generation and Information Retrieval Based on Large Language Models Chairman: Asst. Prof. Farhan Amin, Yeungnam University, South Korea	
16:10-18:35	Zoom E: 898 6687 5208
16:10-16:30 Invited Speech	Research on the Implementation of Algorithmic Thinking and Sentiment Analysis by Applying the Knowledge System Based on Named Entity Recognition Models and Relationship Mapping Models **Dr. Yan Li,** University of Nottingham, Ningbo, China
16:30-16:50 Invited Speech	Improving the Chances of Manuscript Acceptance: How to Address Peer Reviewers Comments **Asst. Prof. Farhan Amin,** Yeungnam University, South Korea
16:50-17:05 C127	Resume named entity recognition method based on ABERT and Multi-Head Attention **Kangyun Zhao,** Shenyang Institute of Computing Technology Chinese Academy of Sciences Shenyang, China
17:05-17:20 C194	Integrating an Innovative Named Entity Recognition Algorithm within Knowledge Engineering Frameworks **Yan Li,** University of Nottingham, Ningbo, China
17:20-17:35 C1102	Confidence-Based Selective Processing for Chinese Contract Information Extraction **Ziting Dou,** University of Chinese Academy of Sciences, China
17:35-17:50 C1347	Engine Maintenance Report Generation Method Combining Rule Constraints with Three-Stage SFT Fine-Tuning **Sen Wang,** Shenyang Institute of Computing Technology, Chinese Academy of Science University of Chinese Academy of Science, China
17:50-18:05 C206	TriFusion-Mol: End-to-End Trimodal Molecular-Text Representation Learning via Stepwise Alignment and Modality-Attention Fusion **Yunpeng Liu,** University of Chinese Academy of Sciences, China
18:05-18:20 C1177	G-code Origin Optimization Using Large Language Model Planner and Geometric Solver **Junhui Yu,** University of Chinese Academy of Sciences Beijing, China
18:20-18:35 C1420	AI-Powered Text Screening: A Generative Approach to Identifying Sensitive Information **Sailesh Rajagopalan,** Worcester Polytechnic Institute, USA

Online Session 11

Monday, December 15, 2025 (UCT+8 Beijing Time)

Interdisciplinary Computing and Applications Based on Machine Learning Chairman: Prof. Baofeng Yang, Nanjing University of Posts and Telecommunications, China	
9:00-11:45	Zoom A: 819 0941 6703
9:00-9:15 C1285	A multi-scale and prior attention improvement network based on Hallo **Donghan Ye,** University of Chinese Academy of Sciences, China
9:15-9:30 C1432	Weakly Supervised and Knowledge-Constrained Multi-Source Learning for Building Fire Safety Risk Assessment **Ao Xing,** Shenyang Fire Science and Technology Research Institute of MEM, China
9:30-9:45 C1142	Electricity Load Situation Awareness Based on Multi-source Fusion **Lijing Ma,** Shenyang Institute of Computing Technology Chinese Academy of Sciences Shenyang, China University of Chinese Academy of Sciences Beijing, China
9:45-10:00 C1111	A Professional-level LOL match Prediction Method Based on Deep Learning **Xiaoxi Jing,** Chang'an University, China
10:00-10:15 C163	Research on Urban Air Quality Prediction Algorithm Based on STL and Deep Learning **Jing Xiao,** Shenyang Institute of Computing Technology Chinese Academy of Sciences,University of Chinese Academy of Sciences, China
10:15-10:30 C1242	A Deep Learning Model for Time-series Prediction in Complex Environments **Xiong Yang,** Shenyang Institute of Computing Technology Chinese Academy of Sciences, Shenyang, China; University of Chinese Academy of Sciences, Beijing, China
10:30-10:45 C2004	A Multi–Target Search Method Based on Predicting Target Locations and Deep Reinforcement Learning **Yuan Liu,** Northwestern Polytechnical University, China
10:45-11:00 C191	Optimization of Resource Scheduling in Digital Avatar Education Systems Using Distributed Deep Reinforcement Learning **Zhengchen Yu,** University of Chinese Academy of Sciences, China
11:00-11:15 C1324	DRLBPSS: Deep Reinforcement Learning-based Parallel Strategy Search with Inference Acceleration for Large Language Models **Jie Ou,** University of Electronic Science and Technology of China, China
11:15-11:30 C1482	An Adaptive and Intelligent Multipath Transport Control Scheduler Based on Deep Reinforcement Learning **Zheming Bao,** School of Electronic and Computer Engineering, Peking University, China
11:30-11:45 C1472	A Multi-Task Graph Neural Network Modeling Framework for Tool Wear and Surface Quality **Zhongyong Xiong,** University of Chinese Academy of Sciences, China

Online Session 12

Monday, December 15, 2025 (UCT+8 Beijing Time)

Software Design and Testing Chairman: Dr. Wenji Li, China Academy of Space Technology, China	
9:00-11:30	Zoom B: 889 1235 9993
9:00-9:15 C1470	SLOFetch: Compressed Hierarchical Instruction Prefetching for Cloud Microservices **Di Zhu,** Santa Clara University, USA
9:15-9:30 C1231	Front-end predictive resource scheduling method and application based on LightGBM **Zezhou Wang,** University of Chinese Academy of Sciences, China
9:30-9:45 C151	Adaptive Front-end Data Loading Control Based on Markov Decision Processes **Long Lv,** University of Chinese Academy Sciences, China
9:45-10:00 C186	DeepVideoSub: An Integrated Detection-Inpainting Pipeline for Automatic Video Subtitle Removal **Chenwang Shen,** University of Chinese Academy of Sciences, China
10:00-10:15 C1363	Context-Aware Frontend Resource Loading via Multi-Factor Dynamic Weighting with an MLP **Ling Fu,** University of Chinese Academy of Sciences, China
10:15-10:30 C1284	LLM-Fuzz: Adaptive, Structure-Aware Fuzzing of JavaScript Engines with Large Language Models **Kongyang Liu,** Tongji University, China
10:30-10:45 C1452	Designing High-Availability and Fault-Tolerant APIGateways for High-Concurrency MicroserviceSystems **Yulong Li,** Shenyang Institute of Computing Technology Chinese Academy of Sciences, China
10:45-11:00 C1153	Knowledge Base System for Long List Rendering Optimization Based on X-Mean Algorithm **huaichen Wan,** University of Chinese Academy of Sciences, China
11:00-11:15 C203	ChunkGraph: Relationship-Driven Retrieval Through Progressive Complete Graphs **Jiale Zhang,** Shenyang Institute of Computing Technology, University of Chinese Academy of Sciences, China
11:15-11:30 C1338	Design and Development of an E-commerce Website and Mobile App for Silk Testing Services **Manikandan J,** PES University, India

Online Session 13

Monday, December 15, 2025 (UCT+8 Beijing Time)

Advanced Information Technology and Data Visualization Driven by AI Chairman: Assoc. Prof. Yiming Lei, Peking University, China	
9:00-11:30	Zoom C: 872 3009 7202
9:00-9:15 C1335	SpiralVAE:A lightweight, highly characterizable Mesh Variational Autoencoders **Hexuan Jin,** Shenyang Institute of Computing Technology, Chinese Academy of Sciences University of Chinese Academy of Sciences, China
9:15-9:30 C1124	Survey of Bare Machine Computing Systems and Applications **Ramesh K Karne,** Towson University, United States
9:30-9:45 C1159	Proportionate Fair Scheduling: Algorithmic Foundations, Implementation, and Empirical Analysis **Binglong Ji,** University of Chinese Academy of Science, China
9:45-10:00 C183	Factors influencing employee adoption of AI-driven valuation tools in the real-estate appraisal industry **Tang Chao,** Chongqing Jinhui Real Estate, Land and Assets Appraisal Co., Ltd., China
10:00-10:15 C1264	Agentic Graph-RAG: A Multi-Agent Framework for Robust, Decomposed Multi-Hop Reasoning **Lupeng Sun,** Shanghai University of Electric Power, China
10:15-10:30 C1389	An Improved Force-Directed Layout for Interactive Visualization of Medical Knowledge Graphs **Junqiang Zhao,** University of Chinese Academy of Sciences, China
10:30-10:45 C1411	A Cloud–Edge–Terminal Architecture with Intelligent Scheduling for Meteorological Observations **Lei Shi,** Hebei Meteorological Technology and Equipment Center, China
10:45-11:00 C124	Research on Multi-Dimensional Risk Control Strategies for Coupon Acquisition **Fenghao Yuan,** University of Chinese Academy of Science, China
11:00-11:15 C1435	Design and Implementation of a Thyroid Disease Health Management Platform Based on Multimodal Models **Lei Xu,** Shenyang Institute of Computing Technology, Chinese Academy of Science University of Chinese Academy of Science, China
11:15-11:30 C162	SEBrain-CLIP: Robust Visual Decoding from EEG with Masking and Guided Attention **Haopei Xu,** University of Science and Technology of China, China

Online Session 14

Monday, December 15, 2025 (UCT+8 Beijing Time)

Mechanical Signal Detection and Fault Diagnosis Chairman: Dr. Qi Liu, Shanghai Jiao Tong University, China	
9:00-11:45	Zoom D: 847 0940 6734
9:00-9:15 C104	Research on Tool Wear Condition Monitoring Model Based on Transformer and Fully Connected Network **Bengang Liu,** Shenyang Aircraft Corporation Shenyang, China
9:15-9:30 C118	A Deep Learning-Based Predictive Maintenance System for Industrial Equipment **Xingyu He,** Shenyang Institute of Computing Technology, Chinese Academy of Sciences University of Chinese Academy of Sciences, China
9:30-9:45 C1220	Stage-Aware Anomaly Transformer for Anomaly State Recognition in Heat Treatment Processes **Xiaolong Li,** University of Chinese Academy of Sciences, China
9:45-10:00 C1238	XG-MSTA Machine Tool Anomaly Detection Method based Multi-Modal Signals **Li Feiyang,** Shenyang Institute of Computing Technology, Chinese Academy of Sciences University of Chinese Academy of Sciences
10:00-10:15 C135	Simplified Transformer with Learnable Fusion Mechanism for Few-Shot Bearing Fault Diagnosis **Jinhao Hu,** Shenyang Institute of Computing Technology, Chinese Academy of Sciences, University of Chinese Academy of Sciences, China
10:15-10:30 C202	A Physics-Guided Hybrid Ensemble Method for Cutting Surface Roughness Prediction **Yani Lu,** Shenyang Institute of Computing Technology Chinese Academy of Sciences, University of Chinese Academy of Sciences, China
10:30-10:45 C1341	Hierarchical Interaction Distillation for Industrial Anomaly Detection from Cross-Type Perspective **Xianglian Liao,** Guangdong University of Technology, China
10:45-11:00 C1207	AirNet: Self-Supervised Anomaly Detection for Aircraft Instrument Screens **Lijuan Yuan,** Shenyang Institute of Computing Technology, Chinese Academy of Sciences, 16 Nanping East Road, Hunnan District, Shenyang, Liaoning, China
11:00-11:15 C1342	Composite Fault Diagnosis of Light Rolling Bearings in Industrial Lifting Mechanisms: CWT Preprocessing and ResGhost-CANet Model **Leile Ma,** Shenyang Institute of Computing Technology, Chinese Academy of Sciences, China
11:15-11:30 C1397	Dual-Path Multimodal Bearing Fault Diagnosis under Cross-Condition and High-Noise **Gufeng Wei,** Shenyang University Of Chemical Technology, China
11:30-11:45 C1343	CNN-BiLSTM Based Cross-Condition Fault Diagnosis for Crane Gearboxes with Attention and Residual Enhancement **Shihua Chen,** Shenyang Institute of Computing Technology, Chinese Academy of Sciences, China

Special Session 1

Monday, December 15, 2025 (UCT+8 Beijing Time)

Intelligent Cloud-Edge-Terminal Cooperation Computing Chairman: Assoc. Prof. Chao Fang, Beijing University of Technology, China Hang Xu, Beijing University of Technology, China	
9:00-12:35	Zoom E: 898 6687 5208
9:00-9:20 Invited Speech C1008	Deep Reinforcement Learning-Based Trajectory Optimization and Collision Avoidance for Multi-UAV Data Collection **Assoc. Prof. Chao Fang,** Beijing University of Technology, China
9:20-9:35 C1003	Transformer-Enhanced Resource Allocation for Delay–Energy Trade off in Cell-Free Mobile Edge Computing **Ziyu Ma,** Beijing Information Science and Technology University, China
9:35-9:50 C1009	Spatiotemporal-aware Joint Optimization of Computation Offloading and Service Caching for Mobile Edge Computing **Wenping Li,** Chongqing University of Posts and Telecommunications, China
9:50-10:05 C1154	Design of Asynchronous NOMA Driven Two Step Random Access for Subspace UAVs **Hua-Min Chen,** Beijing University of Technology, China
10:05-10:20 C1250	Intelligent Resource Optimization for UAV Collaborative Sensing, Computing, and Communication **Yuheng Zhang,** Beijing Information Science and Technology University, China
10:20-10:35 C1409	Improved RT-DETR Algorithm for Detection of Residual Tobacco Leaves in Returnable Containers **Xinyao Gan,** School of Information Science and Engineering, Hebei University of Science and Technology, China
10:35-10:50 C1412	Research on ROI Partition Design Based on Expert Prior Knowledge and ESGCN- Driven Flexible AU Recognition Network Model **Mengze Zhao,** Hebei University of Science and Technology, China
10:50-11:05 C1112	W-ContextNet: A W-Shaped Encoder–Decoder Network for Nuchal Translucency Segmentation **Jian Xu,** Beijing University of Technology, China
11:05-11:20 C510	Enhanced Semi-Global Stereo Matching via Multi-Feature Cost Fusion **Yixuan He,** School of Information Science and Engineering, Hebei University of Science and Technology, China

11:20-11:35 C1007	Two-stage Remote Sensing Images Defogging Method through Edge-Cloud Collaborative **Pengquan Liao,** The 15th Research Institute of China Electronics Technology Group Corporation, China
11:35-11:50 C2003	Multi Objective Optimization of LEO and MEO Dual Layer Satellite Constellation Based on NSGA III: Achieving an Efficient Trade off Between Performance and Cost **Hua-Min Chen,** Beijing University of Technology, China
11:50-12:05 C1001	Deep Learning Product Data Grading Method Integrating Prior Knowledge and Federated Learning **Pengquan Liao,** The 15th Research Institute of China Electronics Technology Group Corporation, China
12:05-12:20 C1004	Dynamic Multi-Beam Resource Allocation in LEO Satellites Based on State-Aware Prediction-Enhanced DDPG **Yue Chao,** Beijing University of Posts and Telecommunications, China
12:20-12:35 C1006	Fed-GRL: A Priority-Aware Resource Allocation Framework based on Federated Graph Deep Reinforcement Learning for Joint Experimentation **Yuhao Su,** The 15th Research Institute of China Electronics Technology Group Corporation, China

Online Session 15

Monday, December 15, 2025 (UCT+8 Beijing Time)

System Simulation, Model Analysis, and Test Verification Based on Computer-Aided Design Chairman: Assoc. Prof. Jing Yang, Guizhou University, China	
13:00-15:30	Zoom A: 819 0941 6703
13:00-13:15 C1394	Performance Simulation and Optimal Design of Micro-Cylindrically Focused Detection Method **Ting Yin,** Gingko College of Hospitality Management, China
13:15-13:30 C1204	A QuadTree-Morton Based Acceleration Method for Surface Mesh Milling Simulation **Wei Li,** University of Chinese Academy of Sciences, China
13:30-13:45 C207	Tooltraj-Net: Lightweight Self-Supervised Framework for Tool Trajectory Compression **Miao Jing,** Shenyang Institute of Computing Technology Chinese Academy of Sciences, Shenyang, China; University of Chinese Academy of Sciences, Beijing, China
13:45-14:00 C1487	Feature-Enhanced Parametric Physics-Informed Neural Network for Three-Dimensional Linear Elasticity Problems **Xu Liao,** Chengdu Institute of Computer Applications, Chinese Academy of Sciences, Chengdu, China; University of Chinese Academy of Sciences, Beijing, China
14:00-14:15 C139	A modeling method for CNC of machine tool kinematics **Yusong Qiao,** University of Chinese Academy of Science, China
14:15-14:30 C145	RAG-Driven Framework for Digraph-Based Automated Assembly Process Generation **Shen Tian,** Shenyang Institute of Computing Technology, Chinese Academy of Sciences Shenyang, China University of Chinese Academy of Sciences, Beijing, China; Shenyang Institute of Automation, Chinese Academy of Sciences Shenyang, China
14:30-14:45 C1280	Improved TOC Algorithm for Synchronous Control of Multiple Permanent Magnet Synchronous Motors **Wenbo Xu,** Shenyang Institute of Computing Technology, Chinese Academy of Sciences Shenyang, China, University of Chinese Academy of Sciences, Beijing, China
14:45-15:00 C1268	A DC-Transformer Driven Multi-Source Dynamic Thresholding Algorithm for Spatiotemporal Pollution Early Warning **Xiong Yang,** Shenyang Institute of Computing Technology Chinese Academy of Sciences, Shenyang, China; University of Chinese Academy of Sciences, Beijing, China
15:00-15:15 C1224	Research and Application of Collaborative Office Technology for Intelligent Pollution Prevention and Control **Jing Xiao,** Shenyang Institute of Computing Technology Chinese Academy of Sciences, University of Chinese Academy of Sciences, China
15:15-15:30 C1302	Multi-objective Optimal Scheduling of Integrated Energy Systems Based on ANSGA-II-AWPA **Jiajun Li,** University of Chinese Academy of Sciences, China

Online Session 16

Monday, December 15, 2025 (UCT+8 Beijing Time)

Advanced Electronics and Information Technology Chairman: Dr. Mingjian He, Central China Normal University, China	
13:00-15:45	Zoom B: 889 1235 9993
13:00-13:15 C507	Research on Kill Web Extraction Method for Combat Networks Based on Coefficient of Variation **Qigen Chen,** Information Support Force Engineering University, China
13:15-13:30 C1407	Dynamic Time-Stamped Network for Optimizing Project Approval Workflows **Zhang Sisi,** Hebei University of Science and Technology, China
13:30-13:45 C1249	Lightweight Blockchain-Based Framework for Credit Risk Assessment and Experimental Analysis **Jiayi Tian,** Xi'an University of Posts & Telecommunications, China
13:45-14:00 C1129	Robust Deduplication for Mixed-Edited Videos via Multi-scale Transformer and Adaptive Thresholding **Chaofan Li,** University of Chinese Academy of Sciences, China
14:00-14:15 C172	A Novel Switching Filtering Group Based on Spoof Surface Plasmon Polaritons **Tie Cheng Wu,** Southeast University, China
14:15-14:30 C1158	An LFM Radar Signal Source Identification Method with RFF Drift Robustness **Lei Yan,** Southeast University, China
14:30-14:45 C1293	Respiratory Monitoring Using 5G PRS Signals: From cooperative and uncooperative perspectives **Yuhan Xiao,** Beijing University of Posts and Telecommunications, China
14:45-15:00 C176	Age of Information Optimization in Industrial IoT with Hybrid Caching Strategies **Baolin Chong,** Academy for Network & Communications of CETC, China
15:00-15:15 C1515	Efficient Multi-Agent Collaborative Perception via Context Awareness for Connected and Automated Vehicles **Jiawen Zhang,** Fuzhou University, China
15:15-15:30 C1218	Profit-driven Multi-item Data Dissemination based on Deep Reinforcement Learning in Internet of Vehicles **Guangxiong Jin,** Kunming University of Science and Technology, China
15:30-15:45 C1496	Research on Dispatch Optimization of Microgrids Based on Multi-Strategy Fusion Improved Dung Beetle Algorithm **Xiao Han,** Shenyang institute of computing technology, Chinese academy of Sciences, China

Online Session 17

Monday, December 15, 2025 (UCT+8 Beijing Time)

Next-Generation Wireless Communication and Protocol Standards Chairman: Dr. Weiwei Jiang, Beijing University of Posts and Telecommunications, China	
13:00-15:50	Zoom C: 872 3009 7202
13:00-13:20 Invited Speech	AI-Native 6G Networks: An Overview **Dr. Weiwei Jiang,** Beijing University of Posts and Telecommunications, China
13:20-13:35 C1462	A Gain Ratio Optimization of Beamforming to Beamnulling in Fluid Antenna Systems **Jiawei Li,** Beijing University of Posts and Telecommunications, China
13:35-13:50 C512	Enhanced Proximal Decoding of Cyclic Codes Based on Their Automorphism **Tengda Yang,** Institute of Microelectronics, Chinese Academy of Sciences, China
13:50-14:05 C513	Efficient Noisy Gradient Descent Bit-Flipping Algorithm for Decoding LDPC Codes **Jie Peng,** Institute of Automation, Chinese Academy of Sciences, China
14:05-14:20 C152	Multicast Service Function Tree Deployment Algorithm Based on Virtual Source Nodes **Yujie Zhang,** Xidian University, China
14:20-14:35 C1473	MIN-SM9: A Certificate-Free Secure Communication Scheme for V2X Based on Multi-Identifier Network **Zhan Guo,** Peking University, China
14:35-14:50 C1240	A Structured Interleaver for Polar-Coded MIMO Systems **Zihan Chen,** Southeast University, China
14:50-15:05 C1477	CMNet: An Adaptive DL Receiver for MIMO-OFDM Systems with Sparse Pilot **Chunhuan Wang,** Beijing University of Posts and Telecommunications, China
15:05-15:20 C1502	A Low-Complexity LADMM-Based PAPR Reduction Method for OFDM-Based Mixed-Numerology Systems **Huazeng Zheng,** Beijng University of Posts and Telecommunications, China
15:20-15:35 C1262	A Finite-State-Machine Decision Transformer for 5G Base Station Energy-Saving Optimization **Xingtong Liu,** Nanjing University of Science and Technology, China
15:35-15:50 C1509	Enabling 6G Multi-Band Integrated Networking with 5G-Advanced Multi-Carrier Technologies **Jincan Xin,** China Telecom Research Institute, China

Online Session 18

Monday, December 15, 2025 (UCT+8 Beijing Time)

Satellite Communication and Integrated Space-Air-Ground Networks Chairman: Dr. Yusi Zhang, The Sixty-third Research Institute, National University of Defense Technology, China	
13:00-15:15	Zoom D: 847 0940 6734
13:00-13:15 C150	UDLA: Upfront Detour-Based Loop Avoidance for Mesh LEO Satellite Networks **Jiangbo Hu,** Beijing University of Posts and Telecommunications, China
13:15-13:30 C169	Research on Heuristic Topology Control Algorithms for Large-Scale Three-Tier LEO Heterogeneous Constellations **Zihan Jia,** Beijing University of Posts and Telecommunications, China
13:30-13:45 C185	A Survey on Online Network Traffic Classification **Chenle Qin,** Beijing University of Technology, China
13:45-14:00 C1297	A Multi-Index Link Establishment Strategy for Large-Scale LEO Satellite Networks **Jialin Yang,** Shanghai Jiao Tong University, China
14:00-14:15 C1488	DCLB: A Distributed Cooperative Load-Balancing Mechanism for Large-Scale Satellite Networks **Ruiwei Yuan,** Beijing University of Posts and Telecommunications, China
14:15-14:30 C1117	Deep Reinforcement Learning Topology Reconstruction in Multi-layer Satellite Network **Zhaobo Wang,** Beijing University of Posts and Telecommunications, China
14:30-14:45 C1251	High precision IOT front end acquisition system **Yulong Liu,** Xi'an University of Posts & Telecommunications, China
14:45-15:00 C1360	An Adaptive QOS Optimization Framework for Realtime IOT Applications **Zaheer Abbas,** Tianjin University of Technology and Education, China
15:00-15:15 C1279	Deep Reinforcement Learning Optimization Strategies for Intelligent Reflecting Surfaces in 6G Communications **Chao Wang,** Qufu Normal University, China

Special Session 9

Monday, December 15, 2025 (UCT+8 Beijing Time)

AI/ML Hardware, Signal Processing and Next-Generation Computing Chairman: Assoc. Prof. Jihao Fan, Nanjing University of Science and Technology, China	
13:00-15:35	Zoom E: 898 6687 5208
13:00-13:20 Invited Speech	AI-Driven intelligent signal processing under extreme environment **Assoc. Prof. Jifei Tang,** Hangzhou Dianzi University, China
13:20-13:35 C1381	Dynamic Thresholding with LSTM-Attention Autoencoder for Fault Detection in Wireless Sensor Networks **Nouman Ijaz,** University of Ulsan, south Korea
13:35-13:50 C1405	DNA Melting Curve Classification Based on Improved ResNet-20 Model **Zihao Wang,** Wuhan University of Science and Technology, China
13:50-14:05 C1271	Deep ResNet Spectral Sensing Method Integrating Attention Mechanism **Dingyin Liu,** Rocket Force University of Engineering, China
14:05-14:20 C1408	Speech Recognition Algorithm Based on HMM Improved by K-means Algorithm **Haolun Li,** School of Information Science and Engineering, Hebei University of Science and Technology, China
14:20-14:35 C9001	A 4.001 mW, 89.31% Accurate Heart Sound Classifying RNN on FPGA with INT8 **Tong Niu,** Dalian University of Technology, China
14:35-14:50 C1203	A new auxiliary feedback cascade error active noise control for sound zone design in a rehabilitation room **Bangjing Chen,** School of Electrical Engineering, Yanshan University，China
14:50-15:05 C1194	NLUS-VQA-VG: Enhancing Interpretability in Domain-Specific Med-VQA for Neonatal Lung Ultrasound through Visual Grounding **Xuming Tong,** Macao Polytechnic University, China
15:05-15:20 C1385	UA-UATD: An Uncertainty-Aware Underwater Acoustic Target Detection Strategy via Deep Evidential Learning **Chaofan Ma,** School of Optoelectronic Science and Engineering, Soochow University, China
15:20-15:35 C1416	DiffFreq: Emphasizing Important Frequencies and Equal Learning of All Frequencies for Time Series Generation **Xuncan Xiao,** South China Normal University, China

Online Session 19

Monday, December 15, 2025 (UCT+8 Beijing Time)

Task Collaboration and Resource Planning in Unmanned Aerial Vehicle Communication and Sensing Systems Chairman: Assoc. Prof. Ye Tian, University of Science and Technology of China, China	
16:00-18:50	Zoom A: 819 0941 6703
16:00-16:20 Invited Speech	Innovative Applications of Machine Vision Techniques in Industrial Product Inspection **Assoc. Prof. Xin Nie,** Wuhan Institute of Technology, China
16:20-16:35 C181	Transparent Relay Backhaul Architecture and Adaptive Hovering Height Optimization for Tethered UAV Base Stations **Lingjun Xu,** China Unicom Digital Technology Co., Ltd., China
16:35-16:50 C1353	Handover Control for Sliced UAV Networks Based on Distributed DDQN **Feng Yang,** Beijing University of Technology, China
16:50-17:05 C8011	A Two-Stage Task Planning Method for Multi-UAV Post-Disaster Reconnaissance **Yongkang Zheng,** University of Science and Technology of China, China
17:05-17:20 C128	Research on 5G-Enabled Immersive Remote Control Drone Method **Lingjun Xu,** China Unicom Digital Technology Co., Ltd., China
17:20-17:35 C198	Deep Self-Evolutionary Topological Reconstruction for UAV Networks under Node Attacks **Decheng Liu,** Beijing University of Posts and Telecommunications, China
17:35-17:50 C129	Self-Organizing 5G-A Emergency Network with Tethered UAV and Transparent Relay Autonomy **Lingjun Xu,** China Unicom Digital Technology Co., Ltd., China
17:50-18:05 C1422	Trust-Based Cross-Domain Batch Authentication Protocol for UAV Networks **Lijun Liu,** Nanjing Audit University Jinshen College, China
18:05-18:20 C1501	Neuro Symbolic Dynamic Pricing for Intent Driven Sustainable UAV Swarm Task Allocation **Jianrui Fan,** Nanjing University of Aeronautics and Astronautics, China
18:20-18:35 C160	Joint Trajectory and Beamforming Optimization for RSMA-UAV Enabled Bistatic ISAC **Zihang Wan,** University of Science and Technology of China, China
18:35-18:50 C1467	Multi-UAV Deployment in Emergency Scenarios Based on PSO-GA Hybrid Algorithm **Weijia Feng,** Southeast University, China

Online Session 20

Monday, December 15, 2025 (UCT+8 Beijing Time)

Intelligent Management and Optimization of Network Resources in Modern Communication Systems Chairman: Dr. Maryam Cheraghy, Wenzhou-Kean University, China	
16:00-18:20	Zoom B: 889 1235 9993
16:00-16:20 Invited Speech	Machine Learning-Driven Wireless Resource Allocation: SVM-Based Factor Graph Design in SCMA Networks **Dr. Maryam Cheraghy,** Wenzhou-Kean University, China
16:20-16:35 C141	Cooperative Beam and Resource Management for Low-Orbit Satellite Communications: Overview and Perspectives **Bowen Zhu,** Army Engineering University of PLA, China
16:35-16:50 C211	Energy Harvesting-Driven Integrated Sensing, Communication, and Computing Edge Resource Allocation Optimization Method **Xinyu Zhang,** School of Communications and Information Engineering, Chongqing University of Posts and Telecommunications, China
16:50-17:05 C1451	Threshold-based Memory Resource Allocation for Entanglement Distribution in Quantum Communication Networks **Zihao Wang,** Beijing University of Posts and Telecommunications, China
17:05-17:20 C8003	User-Centric Beam Coverage and Resource Optimization for Multi-Beam Satellite Systems via Multi-Agent Deep Reinforcement Learning **Yidan Yuan,** School of Information and Communication Engineering, Beijing University of Posts and Telecommunications, China
17:20-17:35 C1211	A Multi-Resource Participation Grid Frequency Control Method Based on Hierarchical Reinforcement Learning **Xin Liu,** Shenyang Institute of Computing Technology Chinese Academy of Sciences, China
17:35-17:50 C8006	Federated Bilevel Reinforcement Learning for UAV-User Stackelberg Game: Service Pricing and Bandwidth Allocation **Shanhan Chen,** University of Science and Technology of China, China
17:50-18:05 C1426	Energy Saving for Heterogeneous Wireless Networks: A Mask-Enhanced Offline Reinforcement Learning Approach **Tong Liu,** Department of Wireless and Terminal Technology, China Mobile Research institute, China
18:05-18:20 C1230	A Resource Pre-Allocation Strategy with Handover Prediction in Dense LEO Satellite Networks **Wanli Deng,** Shanghai Jiao Tong University, China

Online Session 21

Monday, December 15, 2025 (UCT+8 Beijing Time)

Channel Modeling and Estimation Chairman: Dr. Jingxuan Wei, Shenyang Institute of Computing Technology Chinese Academy of Sciences, China	
16:00-18:15	Zoom C: 872 3009 7202
16:00-16:15 C1179	Location Aware Diffusion Models for Efficient and Robust Channel Estimation **Junhao Li,** Beijing University of Posts and Telecommunications, China
16:15-16:30 C1236	Terahertz Channel Modeling Based on Surface Characterization and Angle Transformation **Siyuan Xue,** Xi'an University of Posts &Telecommunication, China
16:30-16:45 C1272	Joint Super-Resolution and Denoising for Channel Estimation in OFDM System **Xinyan Jiang,** School of Information and Automation Qilu University of Technology (Shandong Academy of Sciences) Jinan, China
16:45-17:00 C2005	Research on Statistical Distribution Characteristics of VHF Over-the-Horizon Communication Channel Resources **Chen Wei,** The 54th Research Institute of China Electronics Technology Group Corporation, China
17:00-17:15 C301	Neural Network Parameter Mixed Error Diffusion Model Based on Channel Grouping and Half Convolution **Kehan Hu,** College of Computer and Information Engineering, Jiangxi Agricultural University, China
17:15-17:30 C1384	Wi-Fi Ranging in Mixed LOS/NLOS Environments via Channel Statistics-Guided Learning **Jian Wang,** Northeastern University, China
17:30-17:45 C158	Channel Prediction for Massive MIMO Assisted by Adaptive Sparse Gaussian Progress Regression **Huaibing Peng,** Zhongyuan University of Technology, China
17:45-18:00 C175	MS-GraphFormer: A Multi-Scale Graph-Based Transformer for Channel Prediction **Kai Tong,** University of Science and Technology of China, China
18:00-18:15 C1367	STCMixerNet for Spatio-Temporal CSI Prediction in Massive MIMO-OFDM Systems **Jilong He,** Beijing University of Posts and Telecommunications, China

Online Session 22

Monday, December 15, 2025 (UCT+8 Beijing Time)

Network Security and Privacy Protection Chairman: Dr. Haihan Li, Beijing Research Institute of Telemetry, China Aerospace Science and Technology Corporation, China	
16:00-18:50	Zoom D: 847 0940 6734
16:00-16:20 Invited Speech	AI-Enhanced Cyber Defense for 5G, 6G, and IoT: Securing the Future of Communication Networks **Dr. Teodoro F Revano Jr,** Mapua Malayan Colleges Laguna, Philippines
16:20-16:35 C1283	Ensuring Reproducibility in Stream Processing with Blockchain Technologies **Niaz Mohammad Ramaki,** Technical University Berlin and Zuse Institute Berlin, Germany
16:35-16:50 C110	Research on the Construction Technology of Power Grid Cybersecurity Vulnerability Knowledge Graph Based on Large Language Models **Xingzheng Gao,** University of Chinese Academy of Sciences, China
16:50-17:05 C1109	Web Attack Traffic Classification and Payload Extraction via Lightweight LLM Fine-Tuning **Boren Deng,** China Telecom Research Institute, China
17:05-17:20 C164	PAD: A Port-level Adaptive and Hierarchical DDoS Detection System for High-privacy NAT Networks **Decheng Chen,** Beijing University of Posts and Telecommunications, China
17:20-17:35 C208	BERT-TFPAM:An Improved Attention Mechanism-Based Approach to Telecommunication Fraud Event Argument Recognition **Wen Zhou,** Shenyang University of Technology, China
17:35-17:50 C1100	A Sketch-Based Method for DDoS Attack Flow Detection **Zixuan Zhao,** University of Science and Technology of China, China
17:50-18:05 C1388	Beyond Evasion: WAF Identification Using Evolutionary-Generated Payloads **Peiwei Lin,** Beijing University of Posts and Telecommunications, China
18:05-18:20 C1483	LMAC-Net: A Lightweight Multimodal Attention Compression Network for Edge-Oriented IoT Intrusion Detection **Weizhi Gao,** Beijing University of Posts and Telecommunications, China
18:20-18:35 C1326	UCGVulDetector: A Unified Contract Graph-Based Framework for Enhanced Smart Contract Vulnerability Detection **Jie Ding,** Shenyang Institute of Computing Technology Chinese Academy of Sciences, Shenyang, China; University of Chinese Academy of Sciences, Beijing, China
18:35-18:50 C1465	A deep hybrid framework for trajectory privacy protection based on graph neural networks and Transformers **Yuzhu Zhang,** Tiangong University, China

Delegates List

Peter Murchie	University of Aberdeen, UK
Feng Qing	Southwest Petroleum University, China
Jinwen Zhang	Information Engineering University, China
Kefeng Yu	The Sixty-third Research Institute, National University of Defense Technology, China
Ji Yang	Information Engineering University, China
Cuiran Li	Lanzhou Jiaotong University, China
Liubao Zhang	Lanzhou Jiaotong University, China
Zhanxiao Geng	Beijing Wanyee Technology Co., Ltd., China
Kun Xu	Information Support Force Engineering University, China
Xiao Li	Information Support Force Engineering University, China
Hao Wu	National University of Defense Technology, China

Note