

Medical Healthcare Platform of Dependable Network and Deep Learning for Medical Big Data

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Abstract Personal vital data should be primarily employed for their owners' medical healthcare and wellness in a sense of primary use. EHR and EMR have been developed and applied for medical health record for medical analysis and therapy because a huge size of citizens' vital data can be easily collected with less load of medical staffs and be useful for medical research and clinical activities including regulatory compliance exam for drugs and medical devices. To collect various vital data, medical wireless body area network (BAN) has been researched and developed to be a medical platform by connecting with medical database, registry or repository through cloud network for network therapy and remote medicine and international standard of medical BAN IEEE802.15.6 was established in February 2012. Such a medical platform of BAN, cloud network and data mining server could be a key subject of research and social services to be discussed in a field of medical ICT. There are a lot of research subjects for such a medical platform such as (1) network architecture and database management, (2) security and dependability, (3) regulatory compliance, (4) secondary use of medical big data. This talk will address technical aspects in (1) and (2) in a term of enhanced dependability and security of medial networking and data mining technologies, and regulatory aspects in (3) and (4) in a term of cyber physical security and authentication for medical personal data and compliance of medical data uses. It may cover a latest status report of activities of MDD, IVDD and AIMD in EU, CFDA and CFE in China, FDA in USA and PMDA in Japan.



Short Bio: Ryuji Kohno received the Ph.D. degree from the University of Tokyo in 1984. Since 1998 he has been a Professor and the Director of Centre on Medical Information and Communication Technology, in Yokohama National University in Japan. In his carrier he played a part-time role of a director of Advanced Telecommunications Laboratory of SONY CSL during 1998-2002, directors of UWB Technology and medical ICT institutes of NICT during 2002-2012. Since 2012 he is CEO of University of Oulu Research Institute Japan – CWC-Nippon Co. Since 2007 he has been a distinguished professor in University of Oulu in Finland and since 2014 a director of Kanagawa Medical Device Regulatory Science Centre. He was a member of medical devices committee in PMDA during 2012-2014 and the Science Council of Japan since 2006. He was a member of the Board of Governors of IEEE Information Theory Society in 2000-2009, and editors of IEEE Transactions on Communications, Information Theory, and ITS. He was Vice-president of Engineering Sciences Society of IEICE during 2004-2005, Editor-in chief of the IEICE Trans. Fundamentals during 2003-2005. He is a founder and a chair of steering committee of international symposia of medical information and communication technologies (ISMICT) since 2006.