The International IEEE Workshop on

Security, and Privacy in Human Cybernetics, Smart Cities and IoT

(SPHCSI-2020)

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In Conjunction with IEEE SMC 2020 (SMC2020)

Human Cybernetics (HC) is the science of control and communication in the human being and the machine and it can be broadly classified with the combination of different areas, as examples cyborg, body sensor network, unmanned aerial vehicles networks (UAVN), Internet of Things (IoT), Cyber Physical Systems (CPS), smart electronic systems, etc. With the rapid development of 5G communication/networking, sensing technologies, Artificial Intelligence (AI) and machine learning (ML), and cloud-edge cooperative computing this domain have been becoming increasingly prosperous, which constitute a variety of interconnected, smart, cooperative environments.

Artificial Intelligence (AI) and Mobile based technologies are widely used in computer applications to perform tasks such as monitoring, forecasting, recommending, prediction, and statistical reporting. They are deployed in a variety of systems including robot-controlled warehouses, financial forecasting applications, and security enforcement and are increasingly integrated with cloud, fog and edge computing, big data analytics, robotics, Internet-of-Things, mobile computing, smart cities, smart homes, intelligent healthcare, etc.

IoT, CPS and other abovementioned systems are multi-dimensional complex systems that are the combinations of multiple computing, networking and physical environments through the integration and cooperation of communication, computation and control. Such a complex system can monitor, realize real-time perception, dynamically control and provide information services for large engineering systems.

However, due to the characteristics of complex systems, vulnerable end devices, limited computation/communication/storage/energy resource, heterogeneous networking, etc., security and privacy for the above systems are extremely challenging problems. There exist a lot of security threat incidents, from system invasion, cyber attack, industrial control damage, to data privacy leakage.

This workshop collects novel solutions and offers a venue for researchers and industry partners to publish, present and discuss their latest research results in the area of security and privacy in HC, smart cooperative IoT and CPS.

Workshop Organizers:

Dr. Sk Md Mizanur Rahman, Centennial College, SRahman@centennialcollege.ca

Dr. Mehrdad Tirandazian, Ryerson University, mehrdad.tirandazian@ryerson.ca

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Type of Workshop

Several talks by different speakers under the same theme (like a technical session)

Information on Workshop Point of Contact

Name: **Dr. Sk Md Mizanur Rahman**

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Biography of the Workshop Point of Contact

Dr. Sk Md Mizanur Rahman is a fulltime professor in the department of Information and Communication Engineering Technology, School of Engineering Technology and Applied Science, Centennial College. Prior to his current appointment, he worked as an Assistant Professor for five years in the Information Systems Department at the College of Computer and Information Sciences, King Saud University. He also worked for several years in cryptography and security engineering in the high-tech industry in Ottawa, Canada. In addition, he worked as a postdoctoral researcher for several years at the University of Ottawa, University of Ontario Institute of Technology (UOIT), and University of Guelph, Canada. He completed a Ph.D. in Engineering (Major: Cybersecurity Risk Engineering) in the Laboratory of Cryptography and Information Security, Department of Risk Engineering, University of Tsukuba, Japan, in 2007. The Information Processing Society Japan (IPSJ) awarded Dr. Rahman its Digital Courier Funai Young researcher Encouragement Award for his excellent contributions to IT security research. He is awarded a Gold Medal for distinction in his undergraduate and graduate programs. He has published approximately one-hundred peer reviewed journal and conference research articles. Also, he has a granted industrial patent (US Patent) on cryptographic key generation and protection. Dr. Rahman's primary research interests are cryptographic protocol design, software and network security, reverse engineering and ethical hacking, privacy enhancing technology, sensor and mobile ad-hoc network security, cloud and the Internet of Things (IoT) security.

Dr. Mehrdad Tirandazian received his B.Sc., M.Sc. and Ph.D. degrees in Computer Science. His main Ph.D. research was dedicated to developing algorithms for VLSI Design and Optimization where he explored the advantages of embedding Boolean algebra into the Polynomial Ring. Mehrdad is a researcher and Assistant Professor at Ryerson University, and he has taught a variety of computer science and engineering courses in University of Ontario Institute of Technology, Sheridan College, Humber College, and Centennial College. For e.g. Digital Computation and Programming, Extreme Programming and Agile Processes, Database Systems, Data Structure, Software Design and Analysis, Digital Media Production, Information Technology for Engineers, Introduction to Programming for scientists, and the list goes on. In addition to his vast teaching experience, Mehrdad has had over 10 years of corporate experience working in IT project management in local and international companies as a Senior Systems Architect and Senior Systems Analyst. Mehrdad has introduced, designed and developed University level computer science and engineering courses and has published several computer science and engineering research papers including Computer Graphics, Artificial Intelligence and Fuzzy Logic, and has designed algorithms for numerous computer science and engineering projects. Mehrdad has worked as technical committee member and is a current member of IEEE (Institute of Electrical and Electronics Engineers) and Professional member of CEEA (Canadian Engineering Education Association).