



Webinar on Healthcare IoT

The Third Episode



IEEE Communication Society eHealth Technical Committee: Special Interest Group on "IoT for eHealth" and



Technical Committee Green Computing and Communications: Special Interest Group on "Pandemics"



Dr. **Rongxing Lu**

IEEE Fellow, University Research Scholar
Associate Professor, Faculty of Computer Science
University of New Brunswick
Fredericton, NB, Canada

Title: Enabled Sensors for Health, Home and Environmental Monitoring

Abstract: The advancement of sensing technologies, embedded systems, wireless communication technologies, nano-materials, and miniaturization makes it possible to develop IoT enabled smart sensing systems. IoT enabled wearable and non-wearable sensors monitor physiological parameters as well as human activities continuously to detect any abnormal and/or unforeseen situations which need immediate attention. Therefore, necessary help can be provided in times of dire need. IoT enabled sensors provides real time environmental data which will provide full awareness of weather/climate and can be used to take any strategic/corrective actions to address issues. This seminar will discuss fabrication and developmental works on IoT enabled sensors at Macquarie University based on MEMS as well as flexible materials for home, health and environmental monitoring.



Prof. **Vojislav B. Mišić**

Department of Computer Science
Ryerson University
Toronto, Ontario, Canada

Title: E-skin: From Robots to Humans

Abstract: Healthcare information systems are the next big application area for Blockchain technology. However, straightforward extensions of existing digital cryptocurrency systems such as Bitcoin and Ethereum results in systems that are unsuitable for the stringent requirements posed by healthcare systems. These include the need for data owners to explicitly grant or revoke authorizations for other actors to access healthcare data. Furthermore, all accesses, successful or not, should be recorded on the blockchain as separate transactions, thus ensuring transparency and privacy protection. After reviewing those requirements in some detail, we describe an architecture for a blockchain-based healthcare information system in which block validation is performed through collective signatures initiated by a designated leader and executed by a pool of witnesses, while owner's authorizations use a smart-contract based approach. Finally, we describe the setup in which different kinds of transactions are grouped into categories that are validated by orderer quorums of different size, thus allowing for flexible, geographic area-based transaction and block validation.



Prof. **Ravinder Dahiya**

IEEE Fellow, Electronics and Nanoengineering
EPSRC Research Fellow,
James Watt School of Engineering
University of Glasgow, UK

Title: Enabled Sensors for Health, Home and Environmental Monitoring

Abstract: Inspired from human skin, the electronic skin (e-skin) technology is being explored to provide tactile feedback in robotics and prosthetics. In this regard, a wide range of technologies have been developed, including various types of soft and stiff sensors and flexible electronics. These advances have also opened new applications for e-skin, particularly in the field of health monitoring and rehabilitation. For example, in conformal contact with body parts, the e-skin offers non-invasive means to monitor key physiological parameters or the chronic diseases. This talk will cover such healthcare advances in enabled by e-skin technology.

Principal Host: **Prof. Sudip Misra, IIT Kharagpur, India**
Co-Host: **Dr. Arijit Roy, University of Luxembourg, Luxembourg**
Co-Host: **Dr. Ayan Mondal, IIT Indore, India**

More details can be found [here](#)
Date: **December 1, 2021**
Time: **6:30 PM - 8:45 PM, Indian Time (IST)**



All participants need to pre-register by November 30, 2021 by filling-up the following form: [Registration Link](#)
Zoom sign-in details will be shared with the registered participants using the email address provided in the registration form.