We would like to invite you to attend the Research Seminar

By DR. MOHAMMAD ABDUR RAZZAQUE

Teesside University, UK.

On Mon, 23rd - Tue, 24th July 2018

At the Meeting Room No.3/3, 3rd Floor

School of Information Technology,

King Mongkut's University of Technology Thonburi.

If you are interested in this seminar,

please reserve a seat by July 20th , 2018

at https://goo.gl/forms/ibJizlD0FeHEUhCl3   or QR Code:

The schedule will be as follows:
Monday, 23rd July 2018
13.00 – 15.00   **Talk #1: "Blockchain- Not just for cryptocurrency"**

Tuesday, 24th July 2018
10.00 – 12.00   **Talk #2: "Internet of Medical Things"**
13.30 – 15.30   **Talk #3: "End-to-End Cyber Security in Internet of Things"**

Biography:

Dr. Mohammad Abdur Razzaque (Raz) has more than 12 years of research and development and/or teaching experience on distributed systems (i.e., Internet of Things, P2P Network, and Cloud Computing) and cyber security. He is an expert in end-to-end (sensors-to-cloud) IoT solutions. His research and development are centred on IoT (i.e., wireless sensor networks, body area networks, and vehicular adhoc networks) and cyber security. In the recent years, he is also working on machine learning techniques, including deep learning techniques for IoT applications and cyber security. He is working as a consultant in the areas of IoT solutions and use of machine learning techniques in business for few SMEs in the northeast England. Since, 2008 he is working in these areas and successfully published more than 60 research papers in these areas. Currently, he is working on end-to-end security in IoT, Connected Healthcare, DL and Blockchain in cyber security.

He is a senior Lecturer in the School of Computing, Media and Arts, Teesside University, UK. Before joining Teesside, he worked as a senior Research Fellow at the Trinity College Dublin (2014-2017) and senior Lecturer at the Faculty Computing, University Technology Malaysia (2011-2014). He holds a PhD in distributed systems (i.e., P2P Wireless Sensor Networks, Mobile Adhoc Networks) from the School of Computer Science and Informatics, UCD, Dublin (2008). He also holds M.Sc. & B.Sc. (Hons) in Electronic and Communication Engineering, University of Dhaka, Bangladesh.

Abstracts:

Title: Blockchain- Not just for cryptocurrency

The Blockchain is disrupting and/or will disrupt many industries (e.g.; financial services, real estate, investment strategies, healthcare and education). However, many people know the Blockchain technology by cryptocurrency (i.e., Bitcoin) which is the first application domain of it, and this is sometime misleading. More importantly, many people are unaware of the potential of the Blockchain technology, which could be useful for their problems.

In this seminar, Dr. Raz will explain: (i) basic working principle of the Blockchain, (ii) different generations of the Blockchain with examples, (iii) application domains which will be disrupted by the technology with a special attention on four key domains that could be useful in developing countries, including Thailand: (a) cyber security, (b) healthcare, (c) education, and (d) land registration. The Blockchain technology is evolving and has issues to be addressed. Finally, Dr. Raz will highlight few future research directions to address few of these challenges or issues.

Title: Internet of Medical Things

The global population is increasing while health and medical care budgets (i.e., NHS, UK) are decreasing and the burden of chronic diseases increasing worldwide. All these challenges are putting pressure on doctors and nurses, health & medical care providers, and governments to look for new technologies in order to provide high quality and efficient healthcare services. The Internet of Medical Things (IoMT) is one of the key technologies, which has the potential to offer such services. IoMT (also knowns as Healthcare IoT), refers to a connected infrastructure of medical devices and software applications that can communicate with various healthcare IT systems and things.

In this seminar, Dr Raz will explain the basic concepts of IoMT, and what it can offer for health & medical care services. An example will be discussed to visualise the benefits of IoMT in healthcare. Even with so many opportunities (i.e., 113B pound by 2022), the IoMT is facing many challenges, including cyber security & privacy, and QoS, in getting into mainstream healthcare services. These challenges will be discussed. Finally, Dr Raz will highlight few future research directions in order to address few of these challenges.

Title: End-to-End Cyber Security in Internet of Things

Internet of Things (IoT) applications, where digitally connected devices are encroaching on every aspect of our lives, including our homes, offices, cars, and even our bodies, will transform our lives and societies for the better. Although exciting, there are significant scientific and technological challenges need to be addressed before these applications can be fully realized. Security is the number one challenge to making the IoT a reality. Even with the security concern, use of IoT is growing at a dangerously fast pace, and researchers as well as industries estimate that by 2020, the number of active wirelessly connected devices will exceed 20 billion. This exponential growth of IoT devices is increasing the risks to our lives and properties as well as to the entire IT industry as more connected devices mean more attack vectors and more opportunities for hackers to exploit. In this context, secure IoT is not only essential for its applications, but also for the rest of the IT industry.

An end-to-end (E2E) IoT solution, more generally an IoT ecosystem, includes many stakeholders, and three different layers of elements. All the stakeholders need to be security-aware, and the elements need to be secure for the E2E security of the IoT solution or ecosystem as security is not only a technology problem — it is also a people, management, and business problem. It is easy to think of the E2E security of IoT as a stepwise process, but IoT security needs to be handled holistically to succeed. Security in IoT has many aspects (i.e., non-technical, technical), and a system-wide E2E and holistic security solution needs to address and incorporate all these aspects as exclusion of one of them will end up in an insecure IoT solution. In this seminar, Dr Raz will explain: (i) E2E life cycle of IoT applications, (ii) the security requirements in IoT applications in different aspects, and why is it necessary to be E2E- from design to destruction? (iii) challenges in providing the E2E security. Finally, Dr Raz will highlight few future research directions to address few of these challenges.