

Date : April 3rd, 2014

Time: 8:30AM – 9:30AM

Place: Hazen Hall 126

Presenter: Dr. Faisal Razzak, Software engineer at IPSNP Computing Inc., Saint John, Canada.

Seminar Title: The role of semantic web technologies in smart environments

Abstract: In the last decade, both the industry and the academia have focused on bringing two important changes in the global IT scene. The first change was the ubiquity of computing technology for general masses, which mainly helped trigger the second change; the advent of intelligent and personalized services for individuals. The former effort is being driven by models of Ubiquitous computing, Pervasive computing, Internet of Things etc. The latter effort is being driven by applying the techniques of artificial intelligence, i.e., enriching the available data, and using algorithms or heuristics to achieve intelligence. On one hand, the drive to make intelligent distributed applications on a global scale has provided impetus to the adoption of explicit semantic modeling of concepts represented in web documents, and in general information systems. The semantic modeling of concepts ensures that the data is machine readable, processable and widely accessible. Standard organizations like the Internet Engineering Task Force (IETF) and the World Wide Web Consortium (W3C) have put major effort at specifying, developing, and deploying languages to define and to share meaning of data, hence, providing a technological foundation for semantic interoperability. This technological foundation mainly consists of Resource Description Framework (RDF), Resource Description Framework - Schema (RDFS), Ontology Web Language (OWL), SPARQL query language and Linked Data. On the other hand, the emergence of economically viable and efficient sensor technology, which can be integrated with devices, has enabled system designers to build smart environments. Today our daily spaces are filled with sensors, devices and computational gadgets that measure and generate unstructured data over time (dynamic data), consequently presenting a two-front opportunity for system designers. The first is by acting on these islands of unstructured data and transforming them into structured data with semantics. The outcome will enable automated and intelligent agents to extract and act on this structured data. The second opportunity is to develop automated and intelligent agents that can process the structured data and provide some intelligent services to the users.