From: **Kanagasabai Rajaraman (I2R)** kanagasa@i2r.a-star.edu.sg 📎
Subject: FW: Seminar: Smart Data - How You And I Will Exploit Big Data For Personalized Digital Health And Many Other Activities
Date: March 11, 2015 at 5:57 PM
To: Amit amitpsheth@gmail.com

Dear Amit,

Here it is..

Best Regards
-Raja

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From: Ong Geok Leng Elin (I2R)
Sent: Monday, February 02, 2015 5:00 PM
To: * All Staff (I2R)
Subject: Seminar: Smart Data - How You And I Will Exploit Big Data For Personalized Digital Health And Many Other Activities

Institute for Infocomm Research (I²R)

Seminar:

Smart Data - How You And I Will Exploit Big Data For Personalized Digital Health And Many Other Activities
- by Professor Amit Sheth (Kno.e.sis – Wright State University)

Date	Time	Venue
5 Feb 2015, Thursday	2 pm – 3 pm	Franklin room, Connexis (South Tower), Level 11, Fusionopolis

Abstract

Big Data has captured a lot of interest in industry, with the emphasis on the challenges of the four Vs of Big Data: Volume, Variety, Velocity, and Veracity, and their applications to drive value for businesses. Recently, there is rapid growth in situations where a big data challenge relates to making individually relevant decisions. A key example is personalized digital health that related to taking better decisions about our health, fitness, and well-being. Consider for instance, understanding the reasons for and avoiding an asthma attack based on Big Data in the form of personal health signals (e.g., physiological data measured by devices/sensors or Internet of Things around humans, on the humans, and inside/within the humans), public health signals (e.g., information coming from the healthcare system such as hospital admissions), and population health signals (such as Tweets by people related to asthma occurrences and allergens, Web services providing pollen and smog information). However,

no individual has the ability to process all these data without the help of appropriate technology, and each human has different set of relevant data!

In this talk, I will describe Smart Data that is realized by extracting value from Big Data, to benefit not just large companies but each individual. If my child is an asthma patient, for all the data relevant to my child with the four V-challenges, what I care about is simply, "How is her current health, and what are the risk of having an asthma attack in her current situation (now and today), especially if that risk has changed?" As I will show, Smart Data that gives such personalized and actionable information will need to utilize metadata, use domain specific knowledge, employ semantics and intelligent processing, and go beyond traditional reliance on ML and NLP. I will motivate the need for a synergistic combination of techniques similar to the close interworking of the top brain and the bottom brain in the cognitive models.

For harnessing volume, I will discuss the concept of Semantic Perception, that is, how to convert massive amounts of data into information, meaning, and insight useful for human decision-making. For dealing with Variety, I will discuss experience in using agreement represented in the form of ontologies, domain models, or vocabularies, to support semantic interoperability and integration. For Velocity, I will discuss somewhat more recent work on Continuous Semantics, which seeks to use dynamically created models of new objects, concepts, and relationships, using them to better understand new cues in the data that capture rapidly evolving events and situations.

Smart Data applications in development at Kno.e.sis come from the domains of **personalized health, energy, disaster response, and smart city**. I will present examples from a couple of these.

About the Speaker

Amit P. Sheth (http://knoesis.org/amit) is an educator, researcher, and entrepreneur. He is the LexisNexis Eminent Scholar and founder/executive director of the Ohio Center of Excellence in Knowledge-enabled Computing (Kno.e.sis) at Wright State University. Kno.e.sis conducts research in social/sensor/semantic data and Web 3.0 with real-world applications and multidisciplinary solutions for translational research, healthcare and life sciences, cognitive science, material sciences, and others. Kno.e.sis' activities have resulted in Wright State University being recognized as a top organization in the world on World Wide Web in research impact. Prof. Sheth is one of top authors in Computer Science, World Wide Web, and databases (cf: Microsoft Academic Search; Google H-index). His research has led to several commercial products, many real-world applications, and two earlier companies with two more in early stages of development. One of these was Taalee/Voquette/Semagix, which was likely the first company (founded in 1999) that developed Semantic Web enabled search and analysis, and semantic application development platforms.

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