



COLLEGE OF ENGINEERING  
THE UNIVERSITY OF TOLEDO

# IEEE Toledo Section, Computer Society Chapter & EECS Department Present



## DISTINGUISHED LECTURE

By

**Mazin Yousif, PhD**

## **Cloud Computing - A Paradigm IT Changer**

### **ABOUT THE SPEAKER**

*Dr. Yousif is the Chief Enterprise Architect and Head of Architecture for Shell at T-Systems International. Before that, he was the Chief Technology Officer for Cloud Computing in the Global Technology Services at IBM Canada. He also held various technical executive positions at Numonyx, Intel and IBM. Dr. Yousif was also a chief architect at Numonyx with focus on the role of Phase Change Memory (PCM) in servers' architectures and datacenters optimizations. He was a principal engineer at Intel leading many projects on energy optimizations, virtualization and autonomic computing. He was also one of the principle architects defining the InfiniBand architecture (IBA) and chaired the management working group in the industry-wide InfiniBand Trade Association (IBTA). During his tenure in industry, he has established and led many multi-international multi-company projects. Dr. Yousif chairs the Advisory Board of the European Research Consortium for Informatics and Mathematics (ERCIM). He founded the NSF Industry/University Cooperative Center for Autonomic Computing with three universities and 20+ companies. He is (was) an adjunct professor at 4 universities (Duke, North Carolina State, Arizona and the Oregon Graduate Institute). He chaired standard bodies, has served as General Chair or Program Chair for many conferences and serves in the editorial board of many journals. He is a frequent speaker in academic and industry conferences on various topics related to cloud, autonomic and green computing. He has also published extensively (more than 70 publications). During his tenure at Intel, he awarded eleven professors world-wide several Million of \$US to conduct research. He is also in the IEEE Distinguished Visitors Program. Dr. Yousif finished his Master's and Ph.D. degrees from the Pennsylvania State University in 1987 and 1992, respectively.*

### **ABSTRACT**

*Cloud Computing is an emerging computing paradigm envisioned to change all IT landscape facets including technology, business and services. It is a consumer/delivery model that offers IT capabilities as services billed based on usage. Many such cloud services can be envisioned, but the main ones are IaaS (Infrastructure-as-a-Service), PaaS (Platform-as-a-Service), and SaaS (Software-as-a-Service). The underlying cloud architecture includes a pool of virtualized compute, storage and networking resources that can be aggregated and launched as platforms to run workloads and satisfy their Service-Level Agreement (SLA). Cloud architectures also include provisions to best guarantee service delivery for clients and at the same time optimize efficiency of resources of providers. Examples of provisions include, but not limited to, elasticity through scaling resources up/down to track workload behavior, extensive monitoring, failure mitigation, and energy optimizations. The two main technologies enabling clouds are: (i) Virtualization, the foundation of clouds; and (ii) manageability (autonomics), the command & control of clouds. This talk is intended to provide an overview of cloud computing, its enabling technologies and current challenges. It will also look at clouds' IT/business ramifications as well as required future research.*

5:30 pm – 8:30 pm

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Electrical Industries Building

[727 Lime City Road, Rossford, OH](http://www.utoledo.edu/eeecs/727_Lime_City_Road_Rossford_OH)