



Professor Dan Ionescu
School of Information Technology and Engineering
University of Ottawa

Short Bio:

Dr. Dan Ionescu is a full Professor with the University of Ottawa (the Capital City University in Canada) since 1985. He is the Director of the Network Computing and Control Technologies research laboratory since 1999. He was the director of Computer Engineer from 1996 to 2000. Dr. Dan Ionescu is a senior member of various IEEE, IFIP, and IFAC groups.

His research at the University of Ottawa spans over a few domains such as Artificial Intelligence, Machine Vision, Distributed Computing, Network Computing and Control, internetworking technologies , Web collaboration and etc. His contributions to Expert Systems, Image Processing, Temporal Logic, Discrete Event and Real-Time Systems materialized in a series of more than 250 papers, and an edited book. A series of industrial and governmental research grants were obtained including CITO, Nortel, Newbridge (Alcatel-lucent) , AT&T, CPlane, OCE, NSERC, and many others. His lab now is equipped with a several million-dollar-level high-end routing and switching devices, and large server farms.

He was the founder and CTO of Diatem Networks since 2002, a network service control platform company, which was acquired successfully by Telecom Ottawa. Later, he was involved in the design of a platform for the automation of Information Technology Infrastructures called M3Data. As the CEO of ARTIS, he successfully deployed M3Data solution into Tier 1 companies such as IBM, Thales Group, and others. Recently, his venture is focusing on a new Collaborative Web Platform for supporting high quality web collaboration anywhere, anytime, on any devices, and on any and many applications. The latest works are concerning now new Human Computer Interfaces.

TALK: Autonomic Computing: the Path Towards Controlling Cloud Computing Services

Cloud Computing is defined as a pool of virtualized computer resources deployed and scaled-out quickly through the rapid provisioning of virtual or physical machines. A Cloud Computing platform has to provide self-recovering (healing) from many inevitable hardware/software failures, self-optimization of the consumed computing and networking resources, self-protection in order to cope with the security issues open by this new paradigm of distributed computing, or in one word the self-management of Cloud Computing Services. The goal of Cloud Computing is to share resources among the cloud service consumers, cloud partners, and cloud vendors in the cloud value chain.

Autonomic Computing, on its turn provides the self* features through which complex IT infrastructures such as an on-the-cloud platform can be efficiently deployed and managed. Started by an IBM pamphlet, the Autonomic Computing architecture replicates on another level the well known structure of a Control Systems, namely the Real-Time Control mapped onto the domain of computing environments. The Autonomic Computing Architecture received quite a lot of attention from the academia and industry alike. There are still ongoing debates on leaning on to Learning Systems, Policy Making Systems, or Adaptive Control Systems.

At the confluence of the two domains, the self-management of Cloud Computing can be materialized in solid architectures which combine the Machine Intelligence domains with algorithms inspired from the solid control domain and with modern self-organizing computing.

In his talk Dr. Dan Ionescu will discuss various design principles and autonomic computing algorithms for on-the-cloud services. The emphasis will be set on issues such as real-time architectures for autonomic computing with reference to virtualization and on-the-cloud computing, the self-organizing algorithms for the local autonomic computing cell present in every on-the-cloud service, and adaptive strategies for the global on-the-cloud service. The talk will be illustrated by practical examples as implemented on geographically dispersed on-the-cloud servers.