Il futuro ha radici profonde.

Ph.D. School of Electrical and Electronic Engineering and Computer Science

Austrian-Italian Workshop on "Future Internet Challenges"

4th May 2011, h 14:00 - 18:00
Conference room – Dept. of Computer Engineering and Systems Science
Floor D

An Optimization Framework for Service Selection and Service Composition in Distributed, Heterogeneous Environments

Prof. Erich Schikuta
University of Vienna – Former Vice Dean of the Faculty of Computer Science

AWPS - An Architecture for Pro–active Web Performance Management

Prof. Gabriele Kotsis
Johannes Kepler University of Linz – Vice Rector of Research

On Movement Activities Estimation for Mobile Opportunistic Networking

Dr. Andrea Hess
University of Vienna

Panel Discussion on: "Future Internet: trend, change, vision, challenges, consequences, problems, solutions"

Coordinator: Prof. Guenter Haring
University of Vienna – Former Dean of the Faculty of Computer Science

Ph.D. Coordinator

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An Optimization Framework for Service Selection and Service Composition in Distributed, Heterogeneous Environments

Professor Erich Schikuta
University of Vienna

Abstract: In distributed, heterogeneous environments, where several deployments of a specific service exist, it is crucial to select and combine concrete deployments to build a service chain. In order to decide between deployments with identical functionality, non-functional properties - also called Quality of Service (QoS) properties - are taken into account. Before applying any service selection optimization strategy, the system has to be analyzed in terms of QoS metrics and a classification for QoS attributes of system components has to be devised. This talk presents a blackboard and a genetic algorithm proposed to solve QoS-aware service selection problems. These approaches are compared in terms of performance and scalability and their applicability is shown in some application areas, a worldwide distributed metadata system from ATLAS, a high-energy physics experiment of the Large Hadron Collider at the CERN, and a heterogeneous University Information System. Further possible usage and extension scenarios for the Cloud-based optimization framework are discussed.

Biography: *Erich Schikuta is professor at the University of Vienna. He obtained a Bachelor degree in mathematics and Master and Ph.D. degrees in computer science from the University of Technology of Vienna. His research interests are in the area of parallel and distributed computing (with a specific focus on grid computing and service-oriented architectures), neural network simulation and database systems, which is reflected in more than 150 peer-reviewed papers. He is an expert evaluator and reviewer of the European Commission (FP5, FP6, and FP7) and several other European research and funding organizations (e.g. INRIA). He has also been a member and chair of many program committees of conferences.*

AWPS - An architecture for pro-active web performance management

Professor Gabriele Kotsis, University of Linz

Abstract: The growing demand for quality and performance has become a discriminating factor in the field of software applications. Specifically in the area of web applications, performance has become a key factor for success creating the need for new types of performance evaluation models and methods capable of representing the dynamic characteristics of web environments. This talk will recall seminal work in this area and present AWPS, a tool for automatic web performance simulation and prediction. AWPS is capable of automatically creating a web performance simulation and conducting trend analysis of the system under test. The operation and usage of this tool is demonstrated on a case study of a two-tier architecture system.

Biography: *Gabriele Kotsis received her masters degree (1991, honored with the Award of the Austrian Computer Society), her PhD (1995, honored with the Heinz-Zemanek Preis) and the venia docendi in computer science (2000) from the University of Vienna. Since December 2002 she is holding a full professor position at the Telecooperation Department at the Johannes Kepler University of Linz. Her research interests include performance management of computer systems and networks, workgroup computing, mobile and internet computing, telemedia and telecooperation. She is author of numerous publications and co-editor of several books. From 2003 to 2007 she was president of the Austrian Computer Society. Since October 2007 she is Vice Rector for research at the Johannes Kepler University of Linz.*

On Movement Activities Estimation for Mobile Opportunistic Networking
Andrea Hess, University of Vienna

Abstract: Opportunistic, mobility-assisted, or encounter networking is a technique to disseminate data in a store-and-forward manner by means of spontaneously connecting mobile devices. While in many networked systems mobility is treated as a challenge, mobility facilitates opportunistic networking since it leads to additional node contacts. These networking opportunities of moving devices can be exploited in addition to traditional wireless infrastructure networks or in absence of these networks. By observing mobility characteristics (like velocity, pause time, revisiting patterns, or mobility range) occurring in these movement activities, the forwarding capabilities of the node can be determined. This talk will present our approach of relating movement activities to characteristics observed in urban mobility traces. A Naive Bayes classifier is applied and the impact of these movements on opportunistic forwarding metrics is discussed.

Biography: *Andrea Hess is a Research Assistant at the Research Group Entertainment Computing at the University of Vienna. She is currently working toward the Ph.D. degree in computer science. Her research interests lie in the area of mobile wireless networking; she is particularly interested in realistic mobility modelling and prediction for opportunistic networks.*

Panel discussion on "Future Internet: trend, change, vision, challenges, consequences, problems, solutions"

Coordinator: Professor Guenter Haring, University of Vienna

Biography: *Guenter Haring is professor emeritus in Applied Computer Science at the University of Vienna, Faculty of Computer Science since October 2010. He joined the University of Vienna in October 1985. During this period of 25 years he was primarily working in the area of analysis and design of computer and communication systems with special focus on performance issues. He was leading many international and national projects in this area. He was founding member of the Computer Measurement Group – Central Europe and the Austrian Center for Parallel Computation. From 2000 until 2004 he was Dean of the Faculty of Business Administration and Computer Science and from 2004 until 2008 he was founding Dean of the Faculty of Computer Science at the University of Vienna. From 2006 until 2010 he was member of the steering committee of the Network of Excellence on Future Internet funded by the EC.*