ICSY hosts Upcoming Future Internet Ph.D. Course

From the 5th to 9th of March, 2012, a PhD course, “Future Network Architectures and Experimentation”, will be held at the University of Kaiserslautern.

The course will cover problems with the current Internet architecture, differences between evolutionary and clean slate approaches, research challenges, experimentation tools and techniques, and several currently proposed approaches.

Each current approach will be presented by experts. The Autonomic Network Architecture (ANA) will be presented by Dr. Martin May from Technocolor research lab in Paris. Prof. Peter Steenkiste from Carnegie Mellon University will talk about the eXpressive Internet Architecture (XIA). Miguel Ponce De Leon from the Telecommunications, Software and System Group (TSSG) will cover the Recursive InterNetwork Architecture (RINA), and Dr. Bernd Reuther will discuss the Service Oriented Network Architecture (SONATE).

The details of the course including the registration process can be found at:

http://www.icsy.de/studium/seminar/ws1112/

(Text: Rahamatullah Khondoker)
Overview on ICSY’s study courses

ICSY offers five lectures, a project, and a seminar to the study program of the bachelor and master programs at the Computer Science Department of the University of Kaiserslautern.

Lectures
- Service-oriented Architectures (summer term)
- High Performance Computing – Introduction (summer term)
- Multimedia Systems (winter term)
- Grid & Cloud Computing (winter term)
- High Performance Computing with GPGPUs (winter term)

Project and Seminar
- Service-oriented Computing (project, winter term)
- Service-orientation in Communication and Applications (seminar, summer term)

Service-oriented Architectures (lecture, summer term)
Service-oriented architectures (SOA) are architectural concepts that describe dependable and adaptive systems composed of autonomous services. These autonomous services are described using a standardized language, identified by reference and can be accessed at runtime by standard Internet protocols. The lecture aims at the following learning targets:
- Systematical understanding of service-oriented architectures
- Understanding the theoretical background
- Overview of current technologies and standards
- Ability to systematically design SOA-based applications
- Approaches for the evolution of SOA-based applications.

High Performance Computing – Introduction (lecture, summer term)
This course introduces high performance computing and the use of high performance computers, especially hands-on experience with remotely using batch systems. In addition, different ways of parallelizing simulation programs in C/C++ are discussed and presented for multicore systems (OpenMP), and for massively parallel systems with message passing (MPI).

Service-orientation in Communication and Applications (seminar, summer term)
Service-oriented architecture (SOA) is an architectural paradigm applied for the development of distributed systems. The seminar covers a wide range of topics from the areas SOA and Future Networks supplemental to the lectures “Service-oriented architectures (SOA)” and “Grid & cloud computing”.

Grid & Cloud Computing (lecture, winter term)
This lecture provides in-depth knowledge about large-scale computational environments using the example of Grid and Cloud Computing. Some of the topics are:
- Grid Computing: Resources, Protocols, Infrastructure and Architecture
- Grid Middleware & Tools
- Technological and Economical Enablers for Cloud Computing
- Virtualization
- Utility Computing: X as a Service
- Applications of Grid & Cloud Computing
Multimedia Systems
(lecture, winter term)
This lecture provides an overview about goals and tasks of multimedia systems, as well as the components and boundary conditions for the development of modern multimedia systems. Some of the topics are:

- Introduction to the topic “Multimedia”
- Foundations of perception
- Aspects of distribution in multimedia systems
- Compression techniques (Introduction to information theory; entropy coding, source coding, and hybrid coding; audio/video coding)
- System requirements
- Applications

High Performance Computing with GPGPUs
(lecture, winter term)
Up-to-date graphical devices allow not only video games but may be used for scientific computations. With their superior performance it is not surprising that many of the fastest computers in the world contain these cards. This course offers basic knowledge about high performance computing on graphical devices. The course focuses on programming graphic cards with Compute Unified Device Architecture (CUDA) which is trained and deepened in examples and exercises.

Service-oriented Computing
(project, winter term)
The project “SOA Integration” will be performed in cooperation with Software AG, Darmstadt. Software AG is the leader in Business Process Excellence and the World’s 7th Fastest Growing Technology Company.

As a student participating in this project, you will utilize Software AG technology to integrate provided applications and freely available Web services in a service-oriented architecture. The resulting browser-based interface allows multiple user groups to access the underlying system.

(Text: Tino Fleuren)

ICSY researcher as the most thought-provoking presenter

Rahamatullah Khondoker was called the most thought-provoking presenter by the Future Internet Assembly (FIA) roadmap group for his presentation titled “Engaging Current and Prospective Internet Users in Building and Shaping the Future of the Internet”, during the Future Internet Week 2011 event from 24th October to 28th October held in Poznan, Poland.

FIA is an European Future Internet research community. The FIA roadmap group tries to identify the research challenges that will exist after 2020. The first version of the roadmap was published on the 14th of May, 2011. To refine the roadmap and find missing topics, they organized a session titled “new ideas for research.”

Five contributions for the session were selected: “Visual Analytics” from Fraunhofer Institute, “Making of Innovation” from TCS Digital World, “Engaging Current and Prospective Internet Users” from ICSY, “Service Standardisation” from CKIR, and “Rethinking Service-Oriented Abstraction to Deal with Convergence” from CNIT. Each presentation was five minutes long.

The FIA roadmap group reported, “Rahamatullah argued that developments in Future Internet research should be driven by the needs of the end user, and that there should be a conscious effort to (a) elicit requirements from all classes of user, and (b) educate users about the possibilities and perils of the Future Internet.”

Rahamatullah’s presentation and extended abstract is at http://dspace.icsy.de:12000/dspace/handle/123456789/331.


(Text: Rahamatullah Khondoker)
Facebook, Twitter and more – Social Media for Companies

Social Media is a present topic that is interesting for research as well as small and medium enterprises. In the context of a regular event of the administrative district Eisenberg, ICSY and representatives of local companies met on December, 5th 2011 and had an active discussion about social media and its importance for companies.

Starting point for the discussions during the evening have been two presentations. Prof. Dr. Paul Müller had a presentation about the general idea that is the basis for social media and the implications of the use of social media for companies as well as on a political level. The talk of Joachim Götze focused on the different forms and features of social media that are currently available. These forms of social media provide a subset of all the features and for companies it is important how to make use of some of them.

Social media are internet based applications using Web 2.0 as a technological basis to create and exchange user-created content. Some of the most famous social media applications are Facebook, Twitter or YouTube. A typical goal for companies is the use of social media for marketing purposes. Although it has to be noted that social media is about listening to the customer and not about talking to the customer. Companies can benefit from their customer feedback by better understanding the customer requirements or even by creating new products out of the customer’s ideas.

(Text: Joachim Götze)

ICSY Alumni

ICSY wishes to stay in contact with former colleagues, students, and student researchers in order to build a strong alumni network. Alumni report in order to get a regular update of ICSY’s activities.

We report about selected highlights of the past months, present current research topics, and inform former ICSY members about news in research and lecture.

ICSY hopes you enjoy reading the report and would like to stay in touch with ICSY.

If you have any questions or would like to give feedback about the ICSY report please send an email to alumni@icsy.de

Please inform other former colleagues and students about ICSY Alumni.