IEEE CloudNet

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Third IEEE International Conference on Cloud Networking

Luxembourg • October 8-10, 2014

IEEE

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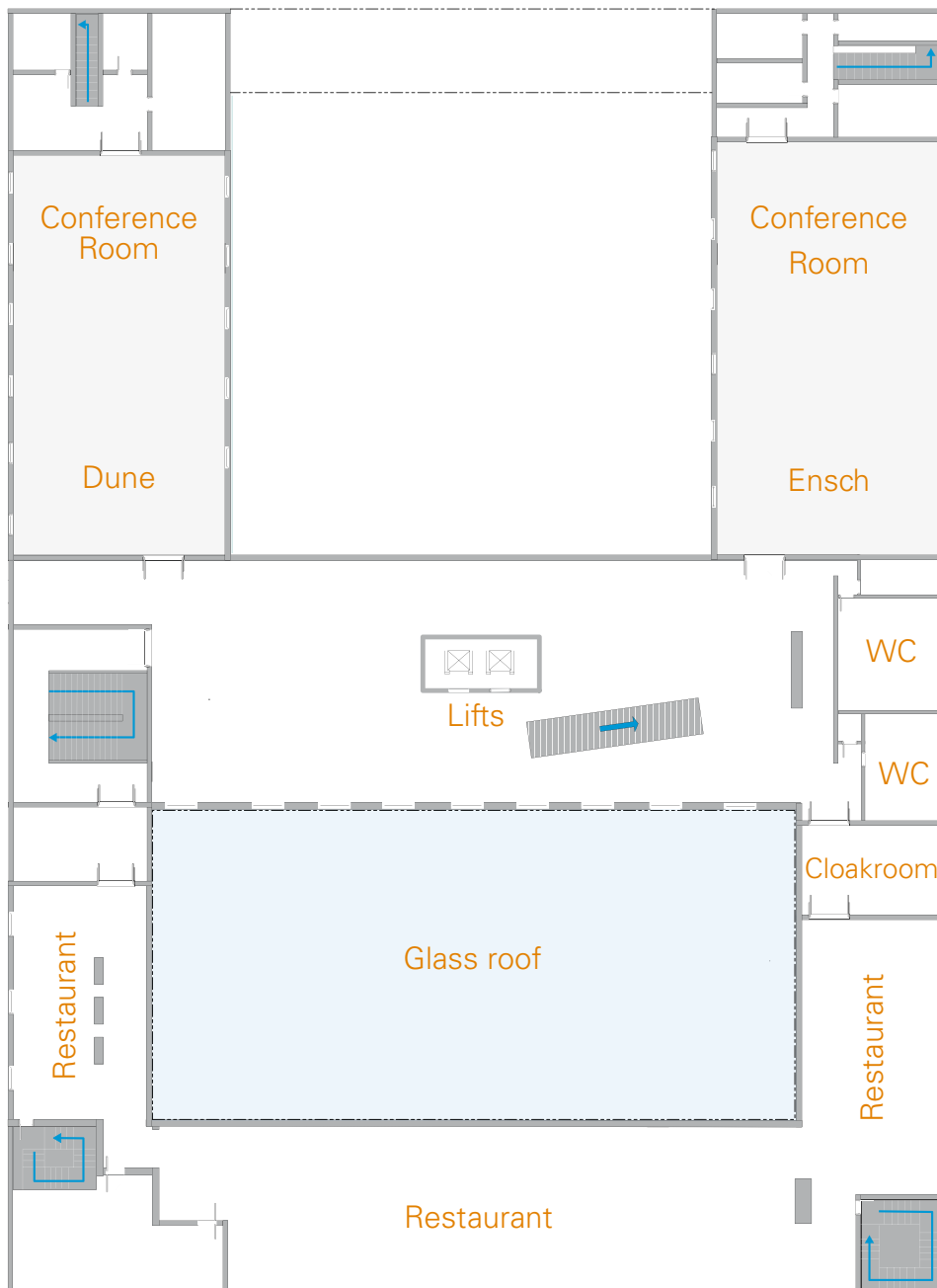
Conference Room

Dune

Conference Room

Ensch

WC

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Lifts

Cloakroom

Restaurant

Glass roof

Restaurant

Restaurant

Table of Contents

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Program at a Glance

Wednesday 8th	Thursday 9th	Friday 10th
08:30 - 09:00 OPENING REMARKS		
09:00 - 10:00 KEYNOTE #1	09:00 - 10:00 KEYNOTE #2	09:00 - 10:00 KEYNOTE #3
10:00 - 10:30 Coffee Break	10:00 - 10:30 Coffee Break	10:00 - 10:30 Coffee Break
10:30 - 12:30 Technical Sessions S1 and S2	10:30 - 12:30 Technical Session S7	10:30 - 12:30 Technical Sessions S9 and S10
12:30 - 14:00 Lunch	12:30 - 14:00 Lunch	12:30 - 14:00 Lunch
14:00 - 15:40 Technical Sessions S3 and S4	14:00 - 15:40 Technical Session S8	14:00 - 15:40 Technical Sessions S11 and S12
15:40 - 16:00 Coffee Break	15:40 - 16:00 Coffee Break	15:40 - 16:00 Coffee Break
16:00 - 17:40 Technical Sessions S5 and S6	16:00 - 17:40 • Posters and Demos • Industrial Session	16:00 - 17:40 Technical Sessions S13 and S14
18:30 - 20:30 Welcome Reception	19:30 - 22:00 Gala Dinner	

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Welcome Message from the General Chairs

On behalf of the Organizing Committee, we are pleased to welcome you to the IEEE 3rd International Conference on Cloud Networking (CLOUDNET) and to the beautiful city of Luxembourg. With one of the most modern data center parks and with low latency connections to the major internet hubs, Luxembourg has become an ideal place for cloud computing in Europe.

IEEE CLOUDNET stands out as a result of its unique focus on the networking aspects of the cloud. In recent years, the conference has enjoyed a rapid growth and has become a premier forum for researchers and industry professionals in this field.

This 2014 CLOUDNET conference has already been a real success in terms of the number of papers submitted and, as a result, the scientific quality. The Technical Program Committee (TPC) of more than 100 members –led by TPC Chairs, Samee U. Khan (North Dakota State University, USA), Lizhe Wang (Chinese Academy of Sciences, China), and El-Ghazali Talbi (INRIA, France)– have worked diligently to review and select the best papers for inclusion in the technical program. Special thanks to our Special Session Chairs, Bernabé Dorronsoro (University of Luxembourg), Christos Verikoukis (CTTC, Spain), and Nicos Passas (University of Athens, Greece), and to all the organizers of special sessions for attracting a large number of submissions and for complementing the technical program with focus areas that include mobile cloud networking, optical network technologies, energy efficiency, sustainability, network virtualization, and tools for the cloud.

On the second day, the conference will host an extensive exhibition featuring more than 15 demonstrations and industry presentations. This has been made possible thanks to the efforts of Posters and Demos Chairs, Stefano Giordano (University of Pisa, Italy) and Sébastien Varrette (University of Luxembourg).

The response to the conference publicity has been exceptional, and this is the result of the hard work and professionalism of our internationally diverse Publicity Committee consisting of Burak Kantarci (University of Ottawa, Canada), Luca Foschini (University of Bologna, Italy), Sushmita Ruj (Indian Statistical Institute, India),

and Yongwei Wu (Tsinghua University, China). This year the number of submissions and, as a consequence, the number of accepted papers has more than doubled making the conference multi-track for the first time.

The organization of a conference would not be possible without the tremendous efforts of the Organizing Chair, Grégoire Danoy, the Financial Chair, Bertrand Dessart, the Publication and Web Chair, Claudio Fiandrino, and Local Arrangement Chairs, Stéphanie Annet, Magali Martin, Céline Lagrost, Daniel Gugan, and Laurent Betry (all from the University of Luxembourg). Special thanks to the Award Chairs Fabrizio Granelli (University of Trento, Italy) and Nelson Fonseca (State University of Campinas, Brazil) for running the awards program and helping to select the recipients of the Student Travel Grants and of the Best Paper Award.

We would like to extend our appreciation to the keynote speakers, Sartaj Sahni (University of Florida, USA), Babak Falsafi (École Polytechnique Fédérale de Lausanne (EPFL), Switzerland), and Prof. Chunming Rong (University of Stavanger, Norway) for agreeing to participate, and we look forward to their visionary talks. We are grateful for the generous support of our corporate patrons, Dimension Data (Platinum), Telindus (Gold), Bull (Silver) and EBRC (Bronze), as well as our sponsors, the IEEE, IEEE Communications Society, IEEE Cloud Computing Initiative, the University of Luxembourg, the Interdisciplinary Centre for Security, Reliability and Trust (SnT), and Fonds National de la Recherche, Luxembourg.

Finally, we would like to thank you, the authors and attendees, for your scientific vision and participation, which has allowed us to build a truly outstanding conference. It has been a great honor and privilege for us to serve as General Chairs of CLOUDNET 2014.

The 2014 CLOUDNET General Chairs

Dzmitry Kliazovich
University of Luxembourg, SnT

Pascal Bouvry
University of Luxembourg, SnT

Albert Y. Zomaya
University of Sydney, Australia

Welcome Message from the Program Chairs

On behalf of the entire program committee, it is our greatest pleasure to welcome you to the third edition of the International Conference on Cloud Networking (CloudNet), which is being held at the beautiful Abbaye de Neumünster, Luxembourg on October 8-10, 2014.

Being an emerging paradigm, cloud computing and cloud networking is enjoying an increased interest from academia and industry alike. Consequently, the IEEE CloudNet has since the inaugural edition, enjoyed a rapid growth. By maintaining its uniqueness, which is the focus on the networking aspects of the cloud, the IEEE CloudNet has undoubtedly become the premier venue for researchers.

Keeping the IEEE CloudNet tradition of rigorous review process, a strong technical program committee consisting of 130 members was constituted. The conference received a total of 167 submissions, out of which 47 were accepted as full papers in the main track undergoing an acceptance rate of 43%. Moreover, 11 were accepted as short papers and 28 in special sessions, which resonates to 6% and 16% of the total submissions respectively. We would like to thank the program committee and the external reviewers for undertaking the review of the papers in a timely manner.

In addition to the main conference, nine "Special Sessions" or tracks were also organized with independently run review process. We were pleased to note that the same rigorous process was used as the main conference. We are grateful to the organizers of all of the special sessions.

The quality of the work that will be presented at the IEEE CloudNet is being well complemented by the excellent keynote speakers. This year we have Prof. Sartaj Sahni (University of Florida), Prof. Chunming Rong (University of Stavanger, Norway), and Prof. Babak Falsafi (Ecole Polytechnique Federale de Lausanne) as the speakers. We are certain that you will enjoy their excellent talks and insights into cloud networking and computing.

As we mentioned earlier, that the IEEE CloudNet has grown significantly and this third edition would not have been possible without the tireless coordinating efforts of the General C-Chairs, namely: Dr. Dzmitry Kliazovich

(University of Luxembourg), Prof. Albert Y. Zomaya (University of Sydney) and Prof. Pascal Bouvry (University of Luxembourg). We enjoyed their support and patience during the pre-submission, review, and post-submission process. We are also grateful for the work of the Special Sessions' Co-Chairs, Bernabé Dorronsoro (University of Luxembourg), Christos Verikoukis (CTTC, Spain), and Nicos Passas (University of Athens) for seamlessly coordinating between the organizers of the nine different sessions.

In the end, we especially would like to thank the research, academia, and industry communities for making IEEE CloudNet a success by submitting papers on their cutting-edge research. We hope that you will enjoy Luxembourg and the event by creating memories and friendship that will last a life-time.

Welcome to the third IEEE CloudNet!

The 2014 CloudNet Program Co-Chairs

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North Dakota State University
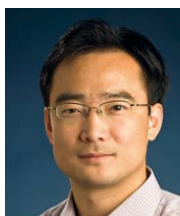
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Chinese Academy of sciences

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The University of Luxembourg is a multilingual, international research university in the Grand Duchy of Luxembourg. The multicultural country is home to the Financial Centre, to European Union Institutions and international enterprises.

The Interdisciplinary Centre for Security, Reliability and Trust (SnT) at the University of Luxembourg is an internationally leading research and innovations centre that together with partners establishes Luxembourg as a European centre of excellence for secure, reliable, and trustworthy ICT systems and services. In this context SnT achieves excellence by targeting research topics that create high impact – well beyond the academic community.

Fonds National de la Recherche (FNR) is a key actor in building a high-quality research system in Luxembourg. The FNR provides funding for all branches of science and the humanities. In addition, FNR is fostering international collaborations, promotes collaborations with the private sector, and supports training of researchers at PhD and postdoctoral levels.

The primary mission of Computer Science and Communications (CSC) Research Unit is to conduct fundamental and applied research in the area of computer, communication and information sciences. The goal is to push forward the scientific frontiers of these fields. Additionally, CSC provides support for the educational tasks at the academic and professional Bachelor and Master levels as well as for the PhD program. CSC focuses on different research thematics, including Advanced Software Systems, Communicative Systems, Intelligent and Adaptive Systems, Information Security.

The Interdisciplinary Lab for Intelligent and Adaptive Systems (ILIAS) is a collective of research groups within the Computer Science and Communication Research Unit (CSC) of the Faculty of Science, Technology and Communication (FSTC). Its main goal is to realize and develop research and academic teaching in the area of intelligent and adaptive systems.

NetApp

NetApp creates innovative products storage systems and software that help customers around the world store, manage, protect, and retain one of their most precious corporate assets: their data. NetApp is recognized throughout the industry for continually pushing the limits of today's technology so that the customers never have to choose between saving money and acquiring the capabilities they need to be successful.

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CROSSFIRE CROSSFIRE is a Multi-Partner Initial Training Network (MITN) Marie Curie project that is focused on providing forward-looking solutions for Long Term Evolution-Advanced (LTE-A) network co-existence including aspects ranging from the physical layer such as co-channel interference and cognition to the user perception of the service, i.e., Quality of Experience (QoE). The project will analyze and propose network virtualization solutions for LTE-A networks, a technology which is envisioned to transform operation of cellular networks in the years to come.

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Luxinnovation, the National Agency for Innovation and Research, was established in 1984 and subsequently constituted as an Economic Interest Grouping (EIG) in 1998. Luxinnovation offers a wide range of integrated and personalized services, which are based on a sectoral approach and provided free of charge to businesses of any size, to innovative start-ups and to public research organizations.

Keynote Speakers
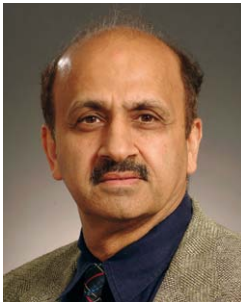
Green Computing

For decades, computer scientists and engineers have focused on the development of economical computer systems (hardware and software) that are able to solve problems of interest in an acceptable amount of time. Their success in doing this has resulted in an IT industry that accounts for an increasing share of the world's energy utilization and an increasing share of global carbon dioxide emissions. The current growth rate in energy consumption and carbon dioxide emissions is not sustainable. Sustainability is a new focus for computer systems.

Green Computing is concerned with reducing the negative impact that the IT industry is having on the environment. An important impact of the Green Computing revolution on computer scientists and engineers is the addition of energy as a metric in the evaluation of computer systems. Today, we are concerned with the development of economical computer systems that are able to solve problems of interest in an acceptable amount of time and using a minimal amount of energy. This talk will first make the case of Green Computing and then illustrate how algorithmic techniques and trends in the consumer electronics/ gaming industries are enabling Green Computing. Illustrative examples include the use of GPUs to reduce the cost of scientific computing.

Prof Sartaj Sahni
University of Florida,
USA

Biography:
Sartaj Sahni is a Distinguished Professor of Computer and Information Sciences and Engineering at the University of Florida. He is also a member of the European Academy of Sciences, a Fellow of IEEE, ACM, AAAS, and Minnesota Supercomputer Institute, and a Distinguished Alumnus of the Indian Institute of Technology, Kanpur. In 1997, he was awarded the IEEE Computer Society Taylor L. Booth Education Award „for contributions to Computer Science and Engineering education in the areas of data structures, algorithms, and parallel algorithms", and in 2003, he was awarded the IEEE Computer Society W. Wallace McDowell Award „for contributions to the theory of NP-hard and NP-complete problems".

Dr. Sahni was awarded the 2003 ACM Karl Karlstrom Outstanding Educator Award for »outstanding contributions to computing education through inspired teaching, development of courses and curricula for distance education, contributions to professional societies, and authoring significant textbooks in several areas including discrete mathematics, data structures, algorithms, and parallel and distributed computing«. Dr. Sahni has published over three hundred research papers and written 15 texts. His research publications are on the design and analysis of efficient algorithms, parallel computing, interconnection networks, design automation, and medical algorithms. He is presently the Editor-in-Chief of ACM Computing Surveys.

Big Data and Dark Silicon: Taming Two IT Inflection Points on a Collision Course

Information technology is now an indispensable pillar of a modern-day society, thanks to the proliferation of digital platforms in the past several decades. We are now witnessing two inflection points, however, that are about to change IT as we know it.

First, we are entering the Big Data era where demand on robust and economical data processing, communication and storage is growing faster than technology can sustain. Second, while forecasts indicate that chip density scaling will continue for another decade, the diminishing returns in digital platform energy efficiency and the impending „energy wall" is leading server designers towards energy-centric solutions and eventually Dark Silicon. In this talk, I will motivate these two IT trends and present promising research avenues for IT platform and infrastructure designers and operators to help mitigate these technological challenges.

Prof Babak Falsafi
Director of EcoCloud,
École Polytechnique
Fédérale de Lausanne
(EPFL)

Biography:
Babak is Professor in the School of Computer and Communication Sciences and the founding director of the EcoCloud research center pioneering future energy-efficient and environmentally-friendly cloud technologies at EPFL.

He has made numerous contributions to computer system design and evaluation including a scalable multiprocessor architecture which was prototyped by Sun Microsystems (now Oracle), snoop filters and temporal stream prefetchers that are incorporated into IBM BlueGene/P and BlueGene/Q, and computer system design evaluation methodologies that have been in use by AMD and HP for research and product development. He is a recipient of an NSF CAREER award, IBM Faculty Partnership Awards, and an Alfred P. Sloan Research Fellowship. He is a fellow of IEEE.

Friday, 10 October 2014, 9:00 AM - 10:00 AM

Service Security in Cloud

Prof. Chunming Rong
Head, Center for
IP-based Service
Innovation (CIPSI),
University of Stavanger, NORWAY

Chair, IEEE Computer
Society Cloud Computing Special Technical
Community (CS CC
STC)

Cloud Computing makes data truly mobile and a user can simply access a chosen cloud with any Internet accessible device. In Cloud Computing, IT-related capabilities are provided as services, accessible without requiring detailed knowledge of the underlying technology. Thus, many mature technologies are used as components in Cloud Computing, but still there are many unresolved and open problems. Security in the cloud domain is considered as one of the top challenges. Cloud and IT service providers should be responsible for the data of their customers and users. However, accountability frameworks for distributed IT services is current still absent and makes it difficult for users to understand, influence and determine how their service providers honor their obligations. It is important to support users in deciding and tracking how cloud service providers use their data. By combining methods of risk analysis, policy enforcement, monitoring and compliance auditing with tailored IT mechanisms for security, assurance and redress.

In any cloud service model, multiple stakeholders are involved. One service provider can be the consumer of another service. The complex stakeholder relationships require precise monitoring and accounting. Monitoring can be performed in multiple layers with different granularities. In the Infrastructure as a Service (IaaS) model, a customer has a set of virtual machine instances that are reachable by each other. Instances can be located in different geographical regions. A variety of technologies are capable of providing instances' connectivity, including network virtualization. From the network monitoring perspective, distinguishing customers' activities in the network is crucial. There are recent studies to improve architecture of the networking services for cloud platform using Software Defined Networking (SDN).

Biography:
Prof. Chunming Rong is head of the Center for IP-based Service Innovation (CIPSI) at the University of Stavanger (UiS) in Norway, where his work focuses on data-intensive (big-data) analytics, cloud computing, security and privacy. He is an IEEE senior member and is honored as member of the Norwegian Academy of Technological Sciences (NTVA) since 2011. He is also an advisor for SINTEF ICT and has extensive contact network and projects in both the industry and academic. He was visiting chair professor at Tsinghua University (2011 - 2014) and served also as an adjunct professor at the University of Oslo (2005 - 2009). He is co-founder and chairman of the Cloud Computing Association (CloudCom.org) and its associated IEEE conference and workshop series. He is chair of IEEE Computer Society Special Technical Community (STC) for Cloud Computing since April 2014, and is the co-Editors-in-Chief of the Journal of Cloud Computing (ISSN: 2192-113X) by Springer and associate editor of the IEEE Transactions on Cloud Computing (TCC).

He received award as Editor's Choice in Discrete Mathematics for 1999, ConocoPhillips Communication Award for 2007, and Sparebank-1 SR-bank Innovation Award for 2011. He coauthored a book titled »Security in Wireless Ad Hoc and Sensor Networks« published by John Wiley & Sons in 2009. Prof. Rong has extensive experience in managing large-scale R&D projects funded by both industry and funding agencies, such as the Norwegian Research Council and the European Framework Programs.

Technical Program

Wednesday, October 8

8:00 AM - 8:30 AM	Registration
8:30 AM - 9:00 AM	Opening Ceremony (Room: Ensch)
9:00 AM - 10:00 AM	Keynote 1: Green Computing (Room: Ensch) Professor Sartaj Sahni, University of Florida
10:00 AM - 10:30 AM	Coffee Break

10:30 AM - 12:30 PM

S1: Distributed Data Center Architectures and Services (Room: Dune)

10:30 AM - Resource Discovery Framework for Cloud-based Genomics Computing

Mauro Femminella (University of Perugia, Italy), Gianluca Reali (University of Perugia, Italy), Dario Valocchi (University Of Perugia, Italy) and Emilia Nunzi (University of Perugia, Italy)

10:50 AM - Specifying and Placing Chains of Virtual Network Functions

Sevil Mehraghdam (University of Paderborn, Germany), Matthias Keller (University Paderborn, Germany) and Holger Karl (University of Paderborn, Germany)

11:10 AM - SLA-aware Resource Scheduling for Cloud Storage

Zhihao Yao (Purdue University, USA), Ioannis Papapanagiotou (Purdue University, USA) and Bob Callaway (NetApp & NC State University, USA)

11:30 AM - Structured Cloud Federation for Carrier and ISP Infrastructure

Vamis Xhagjika (Universitat Politècnica de Catalunya, Spain), Vladimir Vlassov (KTH Royal Institute of Technology, Sweden), Magnus Molin (Ericsson, Sweden) and Simona Toma (Ericsson, Sweden)

11:50 AM - Adaptive Energy Efficient Distributed VoIP Load Balancing in Federated Cloud Infrastructure

Andrei Tchernykh (CICESE Research Center, Mexico), Jorge Mario Cortés-Mendoza (CICESE Research Center, Mexico), Johnatan E Pecero (University of Luxembourg, Luxembourg), Pascal Bouvry (University of Luxembourg, Luxembourg) and Dzmitry Kliazovich (University of Luxembourg, Luxembourg)

12:10 PM - Meteorological Applications utilizing Grid and Cloud Computing

Simon Ostermann (University of Innsbruck, Austria), Felix Schüller (University of Innsbruck, Austria), Radu Prodan (University of Innsbruck, Austria) and Georg Mayr (University of Innsbruck, Austria)

10:30 AM - 12:30 PM

S2: Data Center Network Management, Reliability, Optimization I (Room: Ensch)

Chair: Roberto Canonico (University of Napoli Federico II, Italy)

10:30 AM - On Traffic Fairness in Data Center Fabrics

Dallal Belabed (UPMC, France), Stefano Secci (University Pierre et Marie Curie - Paris 6, France), Guy Pujolle (University Pierre et Marie Curie - Paris 6, France) and Deep Medhi (University of Missouri-Kansas City, USA)

10:50 AM - Efficient UDP-Based Congestion Aware Transport for Data Center Traffic

Lotfi Mhamdi (University of Leeds, UK), Lisa Ye (HKUST, Hong Kong) and Mounir Hamdi (HKUST, Hong Kong)

11:10 AM - Assessing the Impact of Intra-Cloud Live Migration on Anomaly Detection

Syed Noor ul Hassan Shirazi (Lancaster University & InfoLab21, UK), Steven Simpson (Lancaster University, UK), Angelos K. Marnerides (Lancaster University, UK), Michael Watson (Lancaster University, UK), Andreas U. Mauthe (Lancaster University, UK) and David Hutchison (Lancaster University & InfoLab21, UK)

11:30 AM - A Power Efficient Genetic Algorithm for Resource Allocation in Cloud Computing Data Centers

Giuseppe Portaluri (University of Pisa, Italy), Stefano Giordano (University of Pisa, Italy), Dzmitry Kliazovich (University of Luxembourg, Luxembourg) and Bernabe Dorronsoro (University of Luxembourg, Luxembourg)

11:50 AM - A PMIPv6 Approach to Maintain Network Connectivity During VM Live Migration Over the Internet

Solomon Kassahun (Blekinge Institute of Technology, Sweden), Atinkut Demessie (Blekinge Institute of Technology, Sweden) and Dragos Ilie (Blekinge Institute of Technology, Sweden)

12:10 PM - Achieving end-to-end real-time Quality of Service with Software Defined Networking

Jochen W. Guck (Technische Universität München, Germany) and Wolfgang Kellerer (Technische Universität München, Germany)

12:30 PM - 2:00 PM	Lunch

2:00 PM - 3:40 PM

S3: Cloud Federation and Hybrid Cloud Infrastructure I (Room: Dune)
Chair: Jukka K. Nurminen (Aalto University, Finland)

2:00 PM - Bayesian Network, and Probabilistic Ontology Driven Trust Model for SLA Management of Cloud Services

Obed Jules (Université de Montréal, Canada), Mohamed Adel Serhani (UAE University, UAE) and Abdelhakim Hafid (University of Montreal, Canada)

2:20 PM - Consistent Route Update in Software-Defined Networks

Xueli An (DOCOMO Euro-Labs, Germany), David Perez-Caparros (DOCOMO Euro-Labs, Germany) and Qing Wei (DOCOMO Communications Laboratories Europe GmbH, Germany)

2:40 PM - Dynamic Allocation and Efficient Distribution of Data Among Multiple Clouds Using Network Coding

Márton Sipos (Budapest University of Technology and Economics, Hungary), Frank H.P. Fitzek (Aalborg University, Denmark), Daniel E. Lucani (Aalborg University, Denmark) and Morten V. Pedersen (Aalborg University, Denmark)

3:00 PM - An OVF Toolkit Supporting Inter-Cloud Application Splitting

Gaetano Anastasi (CNR-ISTI, Italy), Emanuele Carlini (CNR ISTI, Italy), Massimo Coppola (CNR, Italy), Patrizio Dazzi (ISTI, CNR, Pisa, Italy) and Marco Distefano (CNR-ISTI, Italy)

3:20 PM - Design of an SSO Authentication Infrastructure for Heterogeneous Inter-cloud Environments

Courtney Powell (Hokkaido University, Japan), Takashi Aizawa (Hokkaido University, Japan) and Masaharu Munetomo (Hokkaido University, Japan)

2:00 PM - 3:40 PM

S4: Virtualization of Network Equipment, Virtual Ethernet Switching, Data Center Bridging (Room: Ensch)
Chair: Ioannis Papapanagiotou (Purdue University, USA)

2:00 PM - Data plane acceleration for virtual switching in data centers - NP-based approach

Khalil Blaiech (Université du Quebec à Montreal, Canada), Hamadi Salaheddine (UQAM, Canada), Amina Mseddi (Université du Quebec à Montreal, Canada) and Omar Cherkaoui (UQAM, Canada)

Wednesday, October 8

2:20 PM - Towards a Network Aware VM Migration: Evaluating the Cost of VM Migration in Cloud Data Centers

Hellen Maziku (Tennessee State University, USA) and Sachin Shetty (Tennessee State University, USA)

2:40 PM - Performance Characteristics of Virtual Switching

Paul Emmerich (Technische Universität München, Germany), Daniel Raumer (Technische Universität München, Germany), Florian Wohlfart (Technische Universität München, Germany) and Georg Carle (Technische Universität München, Germany)

3:00 PM - Elastic RAN: Efficient Resource Management in LTE-A FDD/TDD HetNets

Rudraksh Shrivastava (NEC Europe Ltd., Kurfürsten-Anlage, 36 & NEC Europe Ltd., Germany), Salvatore Costanzo (University of Athens, Greece), Konstantinos Samdanis (NEC Europe Ltd., Germany), Dionysis Xenakis (University of Athens, Greece), David Grace (University of York, UK) and Lazaros Merakos (University of Athens, Greece)

3:20 PM - Performance of Network Virtualization in Cloud Computing Infrastructures: The OpenStack Case

Franco Callegati (Universita di Bologna, Italy), Walter Cerroni (University of Bologna, Italy), Chiara Contoli (University of Bologna, Italy) and Giuliano Santandrea (University of Bologna, Italy)

3:40 PM - 4:00 PM	Coffee Break

| 4:00 PM - 5:40 PM | **S5: Green Data Centers and Cloud Networking** (Room: Dune) |

Chair: Bernabe Dorronsoro (University of Luxembourg, Luxembourg)

4:00 PM - On the Throughput and Energy Benefits of Network Coded Cooperation

Nestor Hernandez (Aalborg University, Denmark), Janus Heide (Steinwurf, Denmark), Daniel E. Lucani (Aalborg University, Denmark) and Frank H.P. Fitzek (Aalborg University, Denmark)

4:20 PM - Studying the energy consumption of data transfers in Clouds: the Ecofen approach

Bogdan F Cornea (INRIA, France), Anne-Cecile Orgerie (CNRS & IRISA, France) and Laurent Lefevre (INRIA, France)

4:40 PM - Fostering energy-awareness in scientific cloud users

Simon Ostermann (University of Innsbruck, Austria), Gabor Kecskemeti (MTA SZTAKI, Hungary) and Radu Prodan (University of Innsbruck, Austria)

5:00 PM - Energy Consumption Optimization for Software Defined Networks Considering Dynamic Traffic

Adam Markiewicz (Institute of Communication Networks, Germany), Phuong Nga Tran (Hamburg University of Technology, Germany) and Andreas Timm-Giel (Hamburg University of Technology, Germany)

5:20 PM - Energy-Efficient Virtual Machine Placement in Data Centers With Heterogeneous Requirements

Xiangming Dai (The Hong Kong University of Science and Technology, Hong Kong), Jason Min Wang (The Hong Kong University of Science and Technology, Hong Kong) and Brahim Bensaou (The Hong Kong University of Science and Technology, Hong Kong

4:00 PM - 5:40 PM	**S6: Data Center Network Management, Reliability, Optimization II** (Room: Ensch)

Chair: Andrei Tchernykh (CICESE Research Center, Mexico)

4:00 PM - Dynamic Resource Pooling and Trading Mechanism in Flexible-Grid Optical Network Virtualization

Weisheng Xie (University of Texas at Dallas, USA), Jiafeng Zhu (Huawei Technologies Co., Ltd., USA), Changcheng Huang (Carleton University, Canada), Min Luo (Huawei Technologies, USA) and Wu Chou (Huawei Technologies Co., Ltd., P.R. China)

4:20 PM - Preventing Passive TCP Timeouts in Data Center Networks with Packet Drop Notification

Yu Xia (Hong Kong University of Science and Technology, P.R. China), Ting Wang (Hong Kong University of Science and Technology, Hong Kong), Zhiyang Su (Hong Kong University of Science and Technology, Hong Kong) and Mounir Hamdi (Hong Kong University of Science and Technology, P.R. China)

4:40 PM - Scheduling in Data center networks with Optical Traffic Grooming

Ganesh Chennimalai Sankaran (Indian Institute of Technology Madras & HCL Cisco Offshore Development Center, India) and Krishna M. Sivalingam (Indian Institute of Technology Madras, India)

5:00 PM - OpenNaaS-based Networking Solution for Datacenter Automated Management

José I Aznar (I2cat, Spain), Erik Ruiter (SURFsara, The Netherlands) and Joan A. García-Espín (Fundació i2CAT, Internet i Innovació Digital a Catalunya & Technical University of Catalonia, Spain)

5:20 PM - QoS Management by Competitive Agent-based Negotiation in Distributed Cloud Services

Kaliappa Ravindran (City University of New York, USA)

6:30 PM - 8:00 PM	Welcome Reception

Wednesday, October 9

8:00 AM - 8:30 AM	Registration

9:00 AM - 10:00 AM	Keynote 2: Big Data and Dark Silicon: Taming Two IT Inflection Points on a Collision Course (Room: Ensch) Prof. Babak Falsafi, Director of EcoCloud, École Polytechnique Fédérale de Lausanne (EPFL)

10:00 AM - 10:30 AM	Coffee Break

10:30 AM - 12:30 PM	**S7: Mobile Cloud Networking** (Room: Ensch) **Chair: Jesus Carretero (Universidad Carlos III de Madrid, Spain)** 10:30 AM - QoS-ensuring Distribution of Computation Load among Cloud-enabled Small Cells Michal Vondra (Czech Technical University in Prague, Czech Republic) and Zdenek Becvar (Czech Technical University in Prague, Czech Republic) 10:50 AM - Mobiles on Cloud Nine: Efficient Task Migration Policies for Cloud Computing Systems Lazaros Gkatzikis (KTH Royal Institute of Technology, Sweden) and Iordanis Koutsopoulos (Athens University of Economics and Business and CERTH & CERTH, Greece) 11:10 AM - Distributed joint optimization of radio and computational resources for mobile cloud computing Stefania Sardellitti (University of Rome La Sapienza, Italy), Gesualdo Scutari (State University of New York at Buffalo, USA) and Sergio Barbarossa (Sapienza University of Rome, Italy) 11:30 AM - Device-Centric Cooperation in Mobile Networks Hulya Seferoglu (University of Illinois at Chicago, USA) and Yuxuan Xing (University of Illinois at Chicago, USA) 11:50 AM - Privacy in Crowdsourcing location based services Jacques Bou Abdo (Notre Dame University, Lebanon), Jacques Demerjian (Antonine University - UA, Lebanon), Hakima Chaouchi (Paris, France), Kablan Barbar (Lebanese University, Lebanon) and Guy Pujolle (University Pierre et Marie Curie - Paris 6, France) 12:10 AM - A PCE-based Architecture for the Management of Virtualized Infrastructures Pasquale Donadio (Alcatel-Lucent Italia, Italy), Giovanni Battista Fioccola (University of Napoli Federico II, Italy), Roberto Canonico (University of Napoli Federico II, Italy) and Giorgio Ventre (University of Napoli Federico II, Italy)

12:30 PM - 2:00 PM	Lunch

2:00 PM - 3:40 PM	**S8: Energy Efficiency on Data Centers, Networks and Distributed Infrastructures** (Room: Ensch) **Chair: Sergio Nesmachnow (Universidad de la República, Uruguay)** 2:00 PM - An Energy Efficient Approach to Virtual Machines Management in Cloud Computing Damien Borgetto (University of Toulouse, France) and Stolf Patricia (IRIT Universite Paul Sabatier UTM IUT de Blagnac, France) 2:20 PM - Efficient Auto-configuration of Energy-related Parameters in Cloud-based IoT Platforms Apostolos Papageorgiou (NEC Laboratories Europe, Germany), Ernö Kovacs (NEC Europe Ltd.,

Germany) and Manuel Zahn (TU Darmstadt, Germany)

2:40 PM - Controlling datacenter power consumption while maintaining temperature and QoS levels

Sergio Nesmachnow (Universidad de la República, Uruguay), Cristian Perfumo (CSIRO Energy, Australia) and Inigo Goiri (Rutgers University, USA)

3:00 PM - Priority-based Virtual Machine Load Balancing in a Scientific Federated Cloud

Amol Hindurao Jaikar (KISTI, Daejeon, South korea, Korea), Dada Huang (KISTI, Korea), Gyeong-Ryoon Kim (KISTI, Korea) and Seo-Young Noh (Korea Institute of Science and Technology Information & University of Science and Technology, Korea)

3:20 PM - Saving energy in WSNs with beamforming

Juan F. Valenzuela-Valdés (Universidad de Extremadura, Spain), Francisco Luna (Universidad de Extremadura, Spain), Pablo Padilla (University of Granada, Spain) and Rafael Marcos Luque-Baena (Universidad de Extremadura, Spain)

3:40 PM - 4:00 PM	Coffee Break

4:00 PM - 5:40 PM	**PDS: Posters and Demos Session** (Room: Ensch)

- User-centric Privacy-by-Design Cloud-based Apps: From Theory to Experimentation to Prototyping

Timotheos Kastrinogiannis (VELTI S.A., Greece), A. Daskalopoulos (Velti, Greece), Theodoros Michalareas (Velti, Greece), Iosif Alvertis (National Technical University of Athens, Greece), Michael Petychakis (National Technical University of Athens, Greece), Fenareti Lampathaki (NTUA, Greece), Eric Robson (Waterford Institute of Technology, Ireland) and Donal MacCarthy (Waterford Institute of Technology, Ireland)

- P-TOSCA Portability Demo Case

Sasko Ristov (Ss. Cyril and Methodius University & Faculty of Information Science and Computer Engineering - Skopje, Macedonia, the former Yugoslav Republic of), Magdalena Kostoska (University „Ss. Cyril and Methodius", Faculty of Computer Science and Engineering, Macedonia, the former Yugoslav Republic of) and Marjan Gusev (University Sts. Cyril and Methodius, Macedonia, the former Yugoslav Republic of)

- Scalable Network Intrusion Detection on Virtual SDN Environment

Chiwook Jeong (Gwangju Institute of Science and Technology, Korea), Taejin Ha (Gwangju Institute of Science and Technology, Korea), Jargalsaikhan Narantuya (South Korea & Gwangju Institute of Science and Technology, Korea), Hyuk Lim (Gwangju Institute of Science and Technology, Korea) and JongWon Kim (GIST (Gwangju Institute of Science & Technology), Korea)

- Control of Sensitive Traffic in the Cloud based on OpenFlow

Stéphane Betgé-Brezetz (Alcatel-Lucent Bell Labs, France), Guy-Bertrand Kamga (Alcatel-Lucent Bell Labs, France), Ali El Amrani Joutei (Telecom SudParis, France) and Oussama Maalmi (Telecom SudParis, France)

- Optimal Negotiation of SLA in Federated Cloud using Multiobjective Genetic Algorithms

Soumya Maity (Indian Institute of Technology, Kharagpur, India) and Arindam Chaudhuri (Samsung R & D Institute Delhi, India)

Wednesday, October 9

- Empowering Users of Cloud Computing on Data Confidentiality

Khaled Md Khan (Qatar University, Qatar) and Mahboob Shaheen (Qatar University, Qatar)

- Performance and reliability in storage of cloud computing

Alexander Russkov (Keldysh Institute of Applied Mathematics & Scientific Center Chernogolovka, Russia)

- War against Mobile Malware with Cloud Computing and Machine Learning forces

Fauzia Idrees (City University London & NUST, UK)

- Macro-economy effect on cloud federation

Jacques Bou Abdo (Notre Dame University, Lebanon), Jacques Demerjian (Antonine University - UA, Lebanon), Hakima Chaouchi (Paris, France), Kablan Barbar (Lebanese University, Lebanon) and Guy Pujolle (University Pierre et Marie Curie - Paris 6, France)

- Energy Consumption Optimization for Software Defined Networks Considering Dynamic Traffic

Adam Markiewicz (Institute of Communication Networks, Germany), Phuong Nga Tran (Hamburg University of Technology, Germany) and Andreas Timm-Giel (Hamburg University of Technology, Germany)

- GreenCloud: A Packet-level Simulator of Energy-aware Cloud Computing Data Centers

Mateusz Guzek, (University of Luxembourg, Luxemburg), Dzmitry Kliazovich (University of Luxembourg, Luxemburg), Pascal Bouvry (University of Luxembourg, Luxemburg)

IND: Industrial Session (Room: Ensch)

4:00 PM - What type of cloud are you?

Lorenz Meis, International Business Development & Connectivity & Housing Solutions, Telindus

4:25 PM - The Cloud Computing after a few years: promises vs realities

Jean Pierre Le Treut, Business Development Director, Bull

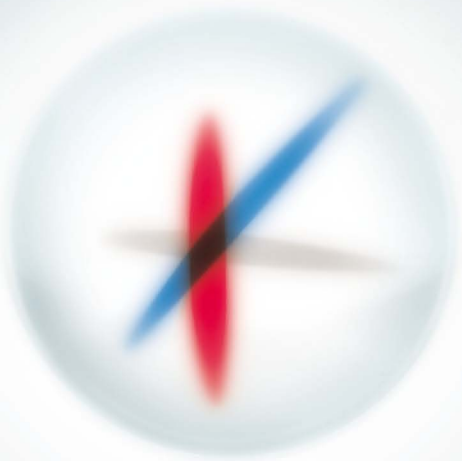4:50 PM - Sustainable Ultrascale Computing Systems: Converging parallel and distributed systems

Jesus Carretero, Full Professor, University Carlos III of Madrid (Spain)

5:15 PM - When IT saves lives! : the Luxemburgish eHealth plan powered by TrustedCloudEurope

M'hamed Zlitni, Sales Manager, EBRC

7:30 PM - 10:00 PM	Gala Dinner

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Friday, October 10

8:00 AM - 8:30 AM	Registration

9:00 AM - 10:00 AM	**Keynote 3: Service Security in Cloud (Room: Ensch)** Prof. Chunming Rong, (University of Stavanger, Norway)

10:00 AM - 10:30 AM	Coffee Break

10:30 AM - 12:30 PM	**S9: Cloud Federation and Hybrid Cloud Infrastructure II** (Room: Dune) **Chair: Joanna Kolodziej (Cracow University of Technology, Poland)**

10:30 AM - An approach for economic evaluation of cloud-based applications

Raúl Peña-Ortiz (Universitat Politècnica de València, Spain), Josep Domenech (Universitat Politècnica de València, Spain), José A. Gil (Politechnic University of Valencia, Spain) and Ana Pont (Universitat Politécnica de València, Spain)

10:50 AM - Cloud4NFV: A Platform for Virtual Network Functions

João Soares (Portugal Telecom Inovação e Sistemas, Portugal), Bruno Parreira (Instituto de Telecomunicações, Universidade de Aveiro, Portugal), Miguel Dias (Portugal Telecom Inovação e Sistemas, Portugal), Jorge Carapinha (PT Inovação S.A. Telecom Group, Portugal) and Susana Sargento (Instituto de Telecomunicações, Universidade de Aveiro, Portugal)

11:10 AM - Federated Clouds for Biomedical Research: Integrating OpenStack for ICTBioMed

Paul R Brenner (University of Notre Dame, USA), Cezary Mazurek (Poznan Supercomputing and Networking Center, Poland), Anil Srivastava (Open Health Systems Laboratory, USA), Michael Sullivan (Internet 2, USA), Devdatt Dubhashi (Chalmers University of Technology, Sweden) and Hemant Darbari (DIT, MIT, Govt. of India, India)

11:30 AM - Game Theoretic Approaches for Revenue Sharing in Federated Cloud

Bassem El Zant (Telecom ParisTech (Ecole Nationale Superieure des Telecommunications), France), Isabel Amigo (Telecom ParisTech (Ecole Nationale Superieure des Telecommunications), France) and Maurice Gagnaire (Telecom ParisTech (Ecole Nationale Superieure des Telecommunications) & Institut Telecom, France)

11:50 AM - Bi-Objective Online Scheduling with Quality of Service for IaaS Clouds

Andrei Tchernykh (CICESE Research Center, Mexico), Luz Lozano (CICESE Research Center, Mexico), Uwe Schwiegelshohn (TU Dortmund University, Germany), Pascal Bouvry (University of Luxembourg, Luxembourg), Johnatan E Pecero (University of Luxembourg, Luxembourg) and Sergio Nesmachnow (Universidad de la República, Uruguay)

12:10 AM - ADON: Application-Driven Overlay Network-as-a-Service for Data-Intensive Science

Sripriya Seetharam (University of Missouri, USA), Prasad Calyam (University of Missouri-Columbia, USA) and Tsegereda Beyene (Cisco, USA)

10:30 AM - 12:30 PM	**S10: IaaS, PaaS, SaaS** (Room: Ensch) **Chair: Walter Cerroni (University of Bologna, Italy)**

10:30 AM - Hadoop MapReduce for Tactical Clouds

Johnu George (Texas A&M University, USA), Chien-An Chen (Texas A&M University, USA), Radu Stoleru (Texas A&M University, USA), Geoffrey G Xie (Naval Postgraduate School, USA), Tamim Sookoor (Army Research Laboratory, USA) and David Bruno (United States Army Research Laboratory, USA)

10:50 AM - Considering VM migration between IaaS Clouds and mobile Clients: Challenges and Potentials

Bernhard Katzmarski (OFFIS, Germany), Andreas Herrholz (OFFIS Institute, Germany), Michele Paolino (Virtual Open Systems, France), Alvise Rigo (Virtual Open Systems, France) and Wolfgang Nebel (OFFIS - Institut für Informatik, Germany)

11:10 AM - Enabling Location-based Policies in a Healthcare Cloud Computing Environment

Sebastian Zickau (Technische Universität Berlin & Service-centric Networking, Germany), Dirk Thatmann (Technical University of Berlin & Technical University of Berlin, Germany), Tatiana Ermakova (Technische Universität Berlin, Germany), Jonas Repschläger (Technische Universität Berlin, Germany), Ruediger Zarnekow (Berlin Institute of Technology (TU Berlin), Germany) and Axel Küpper (TU Berlin, Germany)

11:30 AM - A probabilistic multi-tenant model for virtual machine allocation in cloud systems

Zhuoyao Wang (University of New Mexico, USA), Majeed M Hayat (University of New Mexico, USA), Nasir Ghani (University of South Florida, USA) and Khaled Bashir Shaban (Qatar University & College of Engineering, Qatar)

11:50 AM - Characterizing Microsoft Lync Online in Mobile Networks: a Quality of Experience Perspective

Pedro Casas (Telecommunications Research Center Vienna (FTW), Austria), Andreas Sackl (FTW Telecommunications Research Center Vienna, Austria), Sebastian Egger (FTW - Telecommunications Research Center Vienna & Signal Processing and Speech Communication Laboratory, Graz University of Technology, Austria) and Raimund Schatz (Telecommunications Research Center Vienna (FTW), Austria)

12:10 AM - In-Vehicle Application for Multimodal Route Planning and Analysis

Marius Noreikis (Aalto University, Finland), Pranas Butkus (Aalto University, Finland) and Jukka K. Nurminen (Aalto University, Finland)

12:30 PM - 2:00 PM	Lunch

2:00 PM - 3:40 PM	**S11: Security, Privacy, Confidentiality and Cloud Networking** (Room: Dune) **Chair: Masaharu Munetomo (Hokkaido University, Japan)** **2:00 PM** - CORNER: COst-efficient and Reliability-aware virtual NEtwork Redesign and embedding Yiheng Chen (Concordia University, Canada), Sara Ayoubi (Concordia University, Canada) and Chadi Assi (Concordia University, Canada) **2:20 PM** - Virtual Network Scheduling Design Hao Bai (University of South Florida, USA), Feng Gu (University of New Mexico, USA), Jorge Crichigno (Northern New Mexico College, USA), Samee U. Khan (North Dakota State University, USA) and Nasir Ghani (University of South Florida, USA) **2:40 PM** - An autonomous Cloud management system for in-depth security Aline Bousquet (INSA Centre Val de Loire, University of Orléans, France), Jeremy Briffaut (INSA Centre Val de Loire, University of Orléans, France) and Toinard Christian (Ensi Bourges, France) **3:00 PM** - Enhanced Learning Classifier to Locate Data in Cloud Datacenters Biswajit Biswal (Tennessee State University, USA), Sachin Shetty (Tennessee State University, USA) and Tamara Rogers (Tennessee State University, USA) **3:20 PM** - Towards Corporate Confidentiality Preserving Auditing Mechanisms for Clouds Roland Bless (Karlsruhe Institute of Technology (KIT), Germany) and Matthias Flittner (Karlsruhe Institute of Technology (KIT), Germany)

Friday, October 10

2:00 PM - 3:40 PM

S12: Cloud Traffic Characterization and Measurements, Cloud Traffic Engineering and Control-Plane Architectures (Room: Ensch)
Chair: Stolf Patricia (IRIT Universite Paul Sabatier UTM IUT de Blagnac, France)

2:00 PM - SDN-based Virtual Machine Management for Cloud Data Centers
Richard Cziva (University of Glasgow, United Kingdom), David Stapleton (University of Glasgow, UK), Fung Po Tso (Liverpool John Moores University, UK) and Dimitrios P Pezaros (University of Glasgow, UK)

2:20 PM - Cloud Storage Service Benchmarking: Methodologies and Experimentations
Enrico Bocchi (Politecnico di Torino, Italy), Marco Mellia (Politecnico di Torino, Italy) and Sofiane Sarni (École Polytecnique Fédérale de Lausanne, Switzerland)

2:40 PM - SDN-based Multi-Class QoS-guaranteed Inter-Data Center Traffic Management
Jason Min Wang (The Hong Kong University of Science and Technology, Hong Kong), Ying Wang (The Hong Kong University of Science and Technology, Hong Kong), Xiangming Dai (The Hong Kong University of Science and Technology, Hong Kong) and Brahim Bensaou (The Hong Kong University of Science and Technology, Hong Kong)

3:00 PM - Virtual Network Mapping for Cloud Services Under Probabilistic Regional Failures
Mahsa Pourvali (USF, USA), Hao Bai (University of South Florida, USA), Feng Gu (University of New Mexico, USA), Khaled Bashir Shaban (Qatar University & College of Engineering, Qatar), Mahshid R. Naeini (Texas Tech University, USA), Jorge Crichigno (Northern New Mexico College, USA), Majeed Hayat (Center for High Technology Materials, USA), Samee U. Khan (North Dakota State University, USA) and Nasir Ghani (University of South Florida, USA)

3:20 PM - Mutualized OpenFlow Architecture for Network Access Management
Benjamin Villain (Universite Pierre et Marie Curie, France), Julien Ridoux (University of Melbourne, Australia), Julien Rotrou (Ucopia, France) and Guy Pujolle (University Pierre et Marie Curie - Paris 6, France)

3:40 PM - 4:00 PM Coffee Break

S13: Optimization Models for Cloud Computing (Room: Dune)
Chair: Sebastien Martin (Université de Lorraine, France)

4:00 PM - Impact of workload assignment on power consumption in software-defined data center infrastructure
Takaaki Deguchi (Osaka University, Japan), Yoshiaki Taniguchi (Kindai University, Japan), Go Hasegawa (Osaka University, Japan), Yutaka Nakamura (Osaka University, Japan), Norimichi Ukita (Nara Institute of Science and Technology, Japan), Kazuhiro Matsuda (NTT-AT, Japan) and Morito Matsuoka (Osaka University, Japan)

4:20 PM - A Model for Carbon Footprint Optimization in an InterCloud Environment
Valerie Justafort (Ecole Polytechnique de Montreal, Canada), Ronald Beaubrun (Université Laval, Canada) and Samuel Pierre (Ecole Polytechnique de Montreal, Canada)

4:40 PM - Dual Direction Load Balancing and Partial Replication Storage of Cloud DaaS
Klaithem Al nuaimi (UAEU, UAE), Nader Mohamed (UAEU, UAE), Maryam Al Nuaimi (United Arab Emirates University & AAM, UAE) and Jameela Al-Jaroodi (University of Pittsburgh, USA)

5:00 PM - Unrelated parallel machines with precedence constraints: application to cloud computing

Sebastien Martin (Université de Lorraine, France), Mohammed-Albarra Hassan Abdel-Jabbar (Université de Lorraine, France) and Imed Kacem (Université of Lorraine, France)

5:20 PM - Fuzzy Cloud Service Selection Framework

Masoumeh Tajvidi (Shahid Beheshti University, Australia), Rajiv Ranjan (CSIRO, Australia), Joanna Kolodziej (Cracow University of Technology, Poland) and Lizhe Wang (Chinese Academy of Sciences, P.R. China)

3:40 PM - 4:00 PM	**S14: Mobile Cloud Networking and ITS** (Room: Ensch)

Chair: Josep Domenech (Universitat Politècnica de València, Spain)

4:00 PM - Ethernet-based mobility architecture for 5G

Andrea F. Cattoni (Aalborg University, Denmark), Preben Mogensen (Aalborg University, Denmark), Seppo Vesterinen (Nokia Siemens Networks, Denmark), Matti Laitila (Nokia Siemens Networks, Finland), Laurent Schumacher (FUNDP - The University of Namur, Belgium), Pablo Ameigeiras (University of Granada, Spain) and Juan J. Ramos-Muñoz (University of Granada, Spain)

4:20 PM - Efficient Delta Synchronization Algorithm in Mobile Cloud Networks

Giwon Lee (Korea University, Korea), Haneul Ko (Korea University, Korea), Sangheon Pack (Korea University, Korea) and Chul-Hee Kang (Korea University, Korea)

4:40 PM - Performance evaluation of ICN/CCN based service migration approach in virtualized LTE systems

Triadimas Satria (University of Twente, The Netherlands), Morteza Karimzadeh (University of Twente, The Netherlands) and Georgios Karagiannis (University of Twente, The Netherlands)

5:00 PM - Smart Traffic Framework Based on Dynamic Mobile Clusters

Essam Algizawy (Egypt-Japan University of Science and Technology, Egypt), Ahmed El-Mahdy (Egypt-Japan University for Science and Technology, Egypt) and Hisham ElShishiny (IBM, Egypt)

5:20 PM - Simulation Environment for Testing Transit Signal Priority

Piotr Smietanka (Warsaw University of Technology, Poland), Bartosz Lipinski (Warsaw University of Technology, Poland), Krzysztof Szczypiorski (Warsaw University of Technology, Poland) and Marcin Seredynski (Public Research Centre Henri Tudor, Luxemburg)

5:40 PM - 6:00 PM	Closing Remarks

Eastern Europe-Luxembourg Workshop on Cloud Computing Communications, Security and Services (CLOUDCOMS)

Bring together Luxembourg and Eastern countries in IT research

For many years, the University of Luxembourg developed key competences in the domain of security, reliability and trust. On the basis of these competences, links have been established with other universities of European eastern countries (Luxembourg, Poland, Czech Republic, Ukraine and Russia).

The University of Luxembourg has recently signed agreements on cooperation with some of these prestigious eastern scientific institutions. The goal of these agreements is focused on student exchange, common supervision of PhD students and scientific collaboration between the researchers leading to joint educational and research programmes.

The Eastern Europe-Luxembourg Workshop on Cloud Computing, Communications, Security and Services (CLOUDCOMS) is the next step to enhance the cooperation between Luxembourg and eastern academic societies working in telecommunication, security and innovative IT services. It aims at grouping high profile research experts working in these fields, leading to creation of a platform for research collaboration with international partners.

The CLOUDCOMS workshop is supported by Fonds National de la Recherche (FNR).

Programme

Day 1

8:00 - Registration (ground floor)

8:20 - 10:00
CLOUDNET welcome speech & Keynote (room Ensch)

10:00 - 10:30
Reception of participants, coffee break

Move to room "La Chapelle"

10:30 - 11:00
Computer Sciences in the University of Luxembourg, Yves Le Traon

11:00 - 11:30
Introductory speeches - Franck Leprévost, Pascal Bouvry - University of Luxembourg

Theme 1: Cloud, Communication & HPC
11:30 - 12:00
HPC activity at the University of Luxembourg - Sébastien Varrette - University of Luxembourg

12:00 - 12:30
Task parallelism on top of MPI - Oleg Alienin - National Technical University of Ukraine, Kyiv Polytechnic Institute

12:30 - 14:00 - Lunch

14:00 - 14:30
New research infrastructures in Czech Republic – IT4Innovations, the national supercomputing center - Martin Palkovic - Technical University of Ostrava

14:30 - 15:00
Parametric verification of communications protocols - Wojciech Penczek - Polish Academy of Sciences, Institute of Computer Science

15:00 - 15:30
Big Data Processing and Management in DataCentre Clouds - Joanna Kolodziej - AGH University of Science and Technology

15:30 - 16:00 - Coffee break

Theme 2: Innovation in Services
16:00 - 16:30
Reliability Optimization of Complex Systems on the Base of Type-variety (Diversity) Principle and Applications - Vladimir Zaslavskiy - Taras Shevchenko National University of Kyiv

16:30 - 17:00
Two-base Numeration Systems and Their Applications to Data Compression, Robust Communications and Cryptography - Anatolyi V.Anisimov - Taras Shevchenko National University of Kyiv

17:00 - 17:30 - Round table

18:30 - Welcome drink

Day 2

9:00 - 10:00
CLOUDNET Keynote

10:00 - 10:30 - Coffee break

Move to room "La Chapelle"

Theme 3: Applied security & Cryptography
10:30 - 10:55
A mathematical riddle based on RC4 - Ales Drapal - Charles University in Prague, School of Mathematics

10:55 - 11:20
Authenticated encryption - hot topic in symmetric crypto - Pawel Morawiecki - Polish Academy of Sciences, Institute of Computer Science

11:20 - 11:45
Deniable encryption - Marcel Šebek - Charles University in Prague, School of Mathematics

11:45 - 12:10
Attack defense trees - Sjouke Mauw - University of Luxembourg, SnT

12:10 - 12:35
Location Predication: Communities Speak Louder than Friends - Jun Pang - University of Luxembourg, SnT

12:35 - 14:00 - Lunch

Theme 1: Cloud, Communication & HPC
14:00 - 14:30
Advanced queuing models suitable for solving the problems of optimization of cloud computing networks operation - Alexander Dudin, Belarusian State University

14:30 - 15:00
Efficient and Secure Computing in Cloud Environment: Multiobjective and Game-Theoretical Approach - Franciszek Seredynski - Cardinal Stefan Wyszy ski University in Warsaw

15:00 - 15:30
Security challenges of the Mobile Cloud Internet environment: when do quantitative changes become a paradigm shift - Dennis Gamayunov - Moscow State University

15:30 - 16:00 - Coffee break

16:00 - 16:30
Multi criteria optimization with Quality of Service in Cloud Computing - Andrei Tchernykh - Russian Academy of Sciences, Institute for System Programming

16:30 - 17:00
Cloud computing activity at the University of Luxembourg - Dzmitry Kliazovich - University of Luxembourg, SnT

17:00 - 17:30 - Round table

19:30 - Gala dinner

Day 3

9:00 - 10:00
CLOUDNET Keynote

10:00 - 10:30 - Coffee break

Move to room "La Chapelle"

Theme 3: Applied security & Cryptography
10:30 - 11:00
Diffie-Hellman exchange via group rings - Romana Linkeová - Charles University in Prague, School of Mathematics

11:00 - 11:30
Static and dynamic analyses for defect detection - Arutyun Avetisyan - Russian Academy of Sciences, Institute for System Programming

11:30 - 12:00
Searchable encryption for cloud computing - Qiang Tang - University of Luxembourg

12:00 - 12:30
Differential Analysis of Block Ciphers SIMON and SPECK - Vesselin Velichkov, Alex Biryukov - University of Luxembourg

12:30 - 14:00 - Lunch

Theme 2: Innovation in Services
14:00 - 14:30
Robust Encoding Based on Two-base Numeration System - Igor Zavadsky - Taras Shevchenko National University of Kyiv

14:30 - 15:00
E-commerce algorithms, optimization in e-commerce Green IT - Jedrzej Musial - Poznan University of Technology, Institute of Computing Science

15:00 - 15:30
A Practical Approach to Provisioning CLI Software in Clouds - Evgeny Pyshkin, St Petersburg State Polytechnical University

15:30 - 16:00 - Coffee break

16:00 - 16:30 - Round table

16:30 - 16:45 - Closing session

Participating Universities

University of Luxembourg

Warsaw University of Technology

Poznan University of Technology,
Institute of Computer Science

Polish Academy of Sciences,
Institute of Computer Science

Cardinal Stefan Wyszyński
University in Warsaw

Cracow University of Technology,
Institute of Computer Science

Charles University in Prague,
School of Mathematics

National Technical University
of Ukraine,
Kyiv Polytechnic Institute

Taras Shevchenko National
University of Kyiv

Moscow State University

Russian Academy of Sciences,
Institute for System Programming

Belarusian State University

Social Events

Welcome Cocktail will be held at Verso Bar in Clausen on October 8th

Conference Gala Dinner will be held at Sofitel Luxembourg Europe on October 9th