Networking 2012

Workshop program

21-25 May 2012
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International IFIP TC 6 workshops

ETICS, HetsNets, and CompNets
held at NETWORKING 2012
Prague, Czech Republic, May 25, 2012

ETICS 2012	
09:00-10:00	Keynote I **John Mussachio**
10:00-10:45	Economic Session 1: **Value Network Modeling for the Future Internet**
10:45-11:00	Coffee break
11:00-12:30	Economic Session 2: **End Users and Applications**
12:30- 13:30	Lunch
13:30-14:30	Keynote II **Roch Guérin**
14:30-14:45	Coffee break
14:45-16:00	Technical Session: **Inter-domain QoS-aware Routing**

HetsNets 2012	
09:00-09:30	Opening
09:30-10:45	Session 1: **Future Heterogeneous Network I**
10:45-11:00	Coffee break
11:00-12:30	Session 2: **Future Heterogeneous Network II**
12:30- 13:30	Lunch
13:30-14:30	Session 3: **Future Heterogene-ous Network III**

Computing in Networks 2012	
09:00-09:30	Opening
09:30-10:45	Session 1: **QoS in Networks**
10:45-11:00	Coffee break
11:00-12:30	Session 2: **Strategies and Modeling**
12:30- 13:30	Lunch
13:30-14:30	Keynote **Gokhan Ilk**
14:30-15:30	Session 3: **Identification and Localization**

Workshop ETICS 2012

Keynote I
9:00 – 10:00; Room: 113
Chair: Helia Pouyllau

Provider Incentives and the Net-Neutrality Issue
John Musacchio (University of California, USA)

John Musacchio is an associate professor with the Technology and Information Management program at the University of California Santa Cruz. Professor Musacchio's main research interest is in game theory applied to problems in networking, including both problems in network economics and security. Professor Musacchio completed his PhD in Jan 2005 from the Electrical Engineering & Computer Sciences Department at the University of California, Berkeley. His research advisor was Professor Jean Walrand, and his dissertation work dealt with both pricing of wireless networks, and control of queuing networks. He has been on the faculty of UC Santa Cruz since 2005. From Nov 2000 to Jan 2003, Professor Musacchio helped architect a high speed switch fabric chipset for the start-up company Terablaze, which was subsequently acquired by Agere in Jan 2004.

Abstract.
We address whether local ISPs should be allowed to charge content providers, who derive advertising revenue, for the right to access end-users. We compare two-sided pricing where such charges are allowed to one-sided pricing where they are prohibited. By deriving provider equilibrium actions (prices and investments), we determine which regime is welfare-superior as a function of a few key parameters. We find that two-sided pricing is more favorable when the ratio between parameters characterizing advertising rates and end-user price sensitivity is either low or high. We also investigate how the results depend on whether the industry structure is allowed to change, i.e. when the market-enty decisions of potential ISPs and content providers is included in the model.

Economic Session I: Value Network modeling for the Future Internet
10:00 – 10:45; Room: 113
Chair: Mohamed Lamine Lamali

A Proposal of Business Model Design Parameters for Future Internet Carriers
Antonio Ghezzi (Politechnico di Milino, Italy)

An Instance-based Approach for the Quantitative Assessment of Key Value Network Dependencies
Patrick Zwickl (Forschungszentrum Telekommunikation Wien , FTW, Austria)

Economic Session II: End-users and Applications
11:00 – 12:30; Room: 113
Chair: Antonio Ghezzi

A Evaluating Impacts of Oversubscription on Future Internet Business Models
Anand Raju (IBBT, Belgium)

In Which Content to Specialize?
Eitan Altman (INRIA, France)

From Quality of Experience to Willingness to Pay for Interconnection Service
Andreas Sackl (Forschungszentrum Telekommunikation Wien , FTW, Austria)

Keynote II
13:30 – 14:30; Room: 113
Chair: Eitan Altman

We can make Internet routing better, but do we want to?
Roch Guérin (University of Pennsylvania, USA)

Roch Guérin received an engineer degree from ENST, Paris, France, and M.S. and Ph.D. degrees in Electrical Engineering from Caltech. He joined the Electrical and System Engineering department of the University of Pennsylvania in 1998 as the Alfred Fitler Moore Professor of Telecommunications Networks. Prior to joining Penn, he spent many years at the IBM T. J. Watson Research Center in a variety of technical and management positions. From 2001 to 2004 he was on partial leave from Penn, starting Ipsum Networks, a company that pioneered the concept of route analytics for managing IP networks. Dr. Guérin has published over 200 papers in international journals and conferences, and holds over 30 patents. He has been active in standard organizations such as the IETF. His research is in the general area of networked systems and applications, from wired and wireless networks to social networks, and encompasses both technical and economic factors that affect their evolution. Dr. Guérin has been an editor for multiple ACM and IEEE publications and in 2009 became the Editor-in-Chief of the IEEE/ACM Transactions on Networking. He has also served as General Chair or Program co-Chair for several ACM and IEEE sponsored conferences. Dr. Guérin is an ACM (2006) and IEEE (2001) Fellow. In 1994 he received an IBM Outstanding Innovation Award for his work on traffic management. He received the IEEE TCCC Outstanding Service Award in 2009, and was the recipient of the 2010 INFOCOM Achievement Award for "Pioneering Contributions to the Theory and Practice of QoS in Networks." He was on the Technical Advisory Board of France Telecom for two consecutive terms from 2001 till 2006 and on the Technical Advisory Board of Samsung Electronics in 2003-2004. He joined the Scientific Advisory Board of Simula in 2010.

Abstract.

This is a three-prong talk on the theme that while significant opportunities (and needs) exist to improve overall Internet (routing) reliability, realizing them may be difficult because of a lack of adequate incentives. The first prong quickly reviews various protection routing schemes developed to make intra-domain routing more resilient by leveraging path diversity. The second prong argues that significant path diversity is also available at the inter-domain level, even when restricted by the constraints of typical policies. This diversity, therefore, makes inter-domain extensions that go beyond the single-path limitation of BGP attractive, e.g., by leveraging protection techniques similar to those developed for intra-domain routing. However, in the last prong we argue that even though such solutions may be feasible without uprooting inter-domain routing, i.e., through relatively small extensions to BGP, successfully deploying them may be challenging. We illustrate this using the example of a 15 years old proposal to introduce per route charging in the Internet to control the growth of core routing tables. In a reasonable "market" setting, the approach can be shown to be effective and beneficial to both providers and users. However, it has clearly not taken hold in the Internet, and this in spite of growing concerns with the size of Internet routing tables. Arguably, this is not the first example of market failure of Internet technology (IPv6 is yet another high-visibility such example, and if time permits it will be quickly discussed as well). The main conclusion of this talk is that while technical innovation remains critical to the continued improvement of Internet routing, it is unlikely to suffice without proper concern for ensuring that adequate incentives are in place.

Technical Session: Inter-domain QoS-aware routing
14:45 – 16:00; Room: 113
Chair: Andreas Sackl

Inter-Domain Route Diversity for the Interne
Xavier Misseri (Télécom Paris, France)

Inter-domain Coordination Models
Eleni Agiatzidou (Athen Universit of Economics and Business, Greece)

Reputation-aware Learning for SLA Negotiation
Mohamed Lamine Lamali (Alcatel-Lucent, France)

Workshop HetsNets 2012

Session 1: Future Heterogeneous Network I
9:30 – 10:45; Room: 152
Chair: Emilio Calvanese Strinati

A Fairness Model for Resource Allocation in Wireless Networks

Huaizhou Shi (Delft University of Technology, The Netherlands); Venkatesha Prasad (Delft University of Technology, The Netherlands); Vijay Sathyanarayana Rao (Delft University of Technology, The Netherlands); Ignas G.M.M. Niemegeers (Delft University of Technology, The Netherlands)

An Extension and Cooperation Mechanism for Heterogeneous Overlay Networks

Vincenzo Ciancaglini (INRIA Sophia Antipolis, France); Luigi Liquori (INRIA Sophia Antipolis, France); Giang Ngo Hoang (INRIA Sophia Antipolis-Méditerranée, France); Petar Maksimović (Mathematical Institute of the Serbian Academy of Sciences and Arts, Serbia)

Session 2: Future Heterogeneous Network II
11:00 – 12:30; Room: 152
Chair: Antonio De Domenico

Dynamic Pricing Coalitional Game for Cognitive Radio Networks

Yong Xiao (Trinity College Dublin, Ireland); Luiz A. DaSilva (Virginia Polytechnic Institute and State University)

Evaluation of ON-OFF Schemes and Linear Prediction Methods for Increasing Energy Efficiency in Mobile Broadband Networks

Dario Sabella (Telecom Italia, Italy); Marco Caretti (Telecom Italia, Italy); William Tomaselli (Telecom Italia, Italy); Valerio Palestini (Telecom Italia, Italy); Bruno Cendón (TST Sistemas, Spain); Javier Valiño (TST Sistemas, Spain); Arturo Medela (TST Sistemas, Spain); Yolanda Fernández (TTI Norte, Spain); Luis Sanchez (University of Cantabria, Spain)

Challenge-aware Traffic Protection in Wireless Mobile Backhaul Networks

Javier Martín-Hernández (Delft University of Technology, The Netherlands) ; Christian Doerr (Delft University of Technology, The Netherlands); Johannes Lessmann (NEC Laboratories Europe, Germany); Marcus Schöller (NEC Europe Ltd., Germany)

Session 3: Future Heterogeneous Network III
13:30 – 14:30; Room: 152
Chair: Antonio De Domenico

A Distributed Signaling Fast Mobile IPv6 Scheme for Next Generation Heterogeneous IP Networks

Mohtasim Abbassi (University of Engineering & Technology, Peshawar, Pakistan); Shahbaz Khan (University of Engineering & Technology, Peshawar, Pakistan); Maria Rahman (University of Engineering & Technology, Peshawar, Pakistan)

Energy Efficiency Gains Using VHOs in Heterogeneous Networks

António Serrador (Instituto Superior Tecnico, Technical University of Lisbon, Portugal); Luis M. Correia (IST - Technical University Lisbon, Portugal)

Computing in Networks 2012

Session 1: QoS in Networks
9:30 – 10:45; Room: 153
Chair: Hakan Kavlak

Miroslav Voznak (VSB-Technical University of Ostrava, Czech Republic)
Effective Packet Loss Estimation on VoIP Jitter Buffer

Miroslav Voznak (VSB-Technical University of Ostrava, Czech Republic), Adrian Kovac and Michal Halas (Slovak University of Technology, Slovakia)

Estimation of expectable network quality in wireless mesh networks
Till Wollenberg (University of Rostock, Germany)

Session 2: Strategies and modeling
11:00 – 12:30; Room: 153
Chair: Ondrej Krejcar

Visualization of Complex Networks Dynamics – Case Study
Ivan Zelinka , Donald Davendra and Lenka Skanderova (VSB-Technical University of Ostrava, Czech Republic)

PCI Planning Strategies for Long Term Evolution Networks
Hakan KAVLAK (Ericsson Tokyo, Japan), Gokhan Ilk (Ankara University, Turkey)

Keynote
13:30 – 14:30; Room: 153
Chair: Miroslav Voznak

Speech Coder Identification Using Chaotic Features and Neural Networks as Classifiers
Gokhan Gökhan Ilk (Ankara University, Turkey)

Hakkı Gökhan Ilk received the B.S. degree from Ankara University as summa cum laude. He received M.S. degree in instrument design and application and the Ph.D. degree from the University of Manchester, Manchester, U.K., in 1994 and 1997, respectively. He is a Professor with the Electronics Engineering Department, Ankara University. He is the founder of the Ankara University Speech Processing Group (AUSPG). His current research interests are

digital signal processing and speech coding in particular. Prof. Ilk was the recipient of Ankara University's sponsorship for his postgraduate studies in the U.K and "Best Academic Study" award by Turkcell, the biggest GSM operator in Turkey.

Abstract.

Speech coder identification refers to identification or recognition of a speech coder directly from a bit stream. The fundamental idea behind coder identification is that different coders should posses different statistical bit patterns and therefore recognition should be possible using chaotic features such as false nearest neighbor fractions. In our study theoretical coders have been investigated first and then research has been extended to real time actual speech coders. The proposed speech coder identification system that operates on nine different and popular conventional coders operate either in VoIP or communication networks. Our proposed coder identifier delivers between 96.36 to 100% performance in voice coder recognition.

Session 3: Identification and Localization
14:30 – 15:30; Room: 153
Chair: Ivan Zelinka

Development of Localization Module for Various Smart Devices Platforms
Ondrej Krejcar (University of Hradec Kralove, Czech Republic)

Improved GSM-based Localization by Incorporating Secondary Network Characteristics
Marek Dvorsky, Libor Michalek, Pavel Moravec and Roman Sebesta (VSB-Technical University of Ostrava, Czech Republic)

Notes: