Program

Thursday, September 24, 2009
8:30AM - 10:30AM
Sala G3

Technical Session 1: Wireless networks

An Approach for Wireless Sensor Networks Topology Control in Indoor Scenarios

Sérgio Kostin, Ronaldo Moreira Salles, Claudio Luis de Amorim

Securing Wireless Mesh Networks: a Winning Combination of Routing and Forwarding Mechanisms

Viviane Lima, Vitor Ruivo, Marilia Curado

On Using Grid of Collocated APs to Improve Performance of Wireless VoD Systems

Leonardo Bidese de Pinho, Claudio Luis de Amorim

A connection level model for IEEE 802.11 cells

Andrés Ferragut, Fernando Paganini

11:00AM - 11:30AM
Sala G3

Opening & prizes to ACM best papers

11:30AM - 00:30PM
Sala G3

Plenary talk

The Web: a web of webs?

by Jussara M. Almeida

The Web can be seen as a large-scale heterogeneous distributed system built from multiple layers of interdependent dynamic complex networks.

Thus, a solid understanding of the properties and processes that drive the creation and evolution of these networks is essential to the design of more robust and reliable Web systems. Such knowledge is in need particularly for the currently very popular Web 2.0 applications, in which users play a central role in the creation and publication of content. In this talk, I will share a view of the web as a “web of webs”, show current results addressing problems in some of these webs, and point out some open research challenges.

2:00PM - 3:00PM
Sala G3

Technical Session 2: Optimization models

Optimization in Network Intra-Domain Routing (Invited talk)

Luciana S Buriol, Instituto de Informática (INF), Universidade Federal do Rio Grande do Sul (UFRGS)

Routing protocols like OSPF (Open Shortest Path First) work on a set of link weights set up to control network data flow. Finding link weights that minimize network congestion for a given network topology and demand matrix is known as the Weight Setting Problem (WSP), and it was proved to be a NP-Hard problem. In this talk, I will present this problem as well as the problem of assigning weights and multiplicities to each arc, aiming to design efficient OSPF-routed networks with minimum total weighted multiplicity needed to route the required demand and handle any single arc or router failure. We propose an evolutionary algorithm for both problems, and present results applying it to several real-world problem instances.

Optimal Wavelength Converter Allocation: A New Approach Based MOEA

Rodrigo Maciel, Marco Sobrino, Diego Pinto, Benjamín Barán, Carlos Brizuela

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3:00PM - 4:00PM
Sala G3

Technical Session 3: Peer-to-Peer networks

Security Challenges for Peer-to-Peer Networks (Invited talk)

Marinho P Barcellos, Instituto de Informática (INF), Universidade Federal do Rio Grande do Sul (UFRGS)

Peer-to-Peer (P2P) systems are large-scale distributed systems characterised by transient autonomous peer populations, dynamically auto-organised in an overlay network without little or no involvement of a centralised server. While important scientific advancements were reached in terms of overlays and their properties, society witnessed a massive popularization of file sharing, from Gnutella to BitTorrent. With millions of users around the world, these applications dominated the first generation of P2P applications. More recently, a second generation starts to emerge, led by P2P streaming and its variations, namely live streaming, video on-demand and voice-over-IP. Examples of successful applications include PPLive and Skype. Like file sharing, these novel P2P applications have huge impact on society. One of the main challenges for the further evolution and adoption of novel P2P systems is their inherent lack of security. This exposes home users and hinders the use of P2P in the Industry. Further, P2P systems are easy target to certain kinds of attacks. This talk will review the most important kinds of P2P applications and provide an overview of security issues in P2P systems, surveying key proposals and trends in the literature to make them more robust against attacks.

GoalBit: The First Free and Open Source Peer-to-Peer Streaming Network

María Elisa Bertinat, Daniel De Vera, Darío Padula, Franco Robledo Amoza, Pablo Rodríguez-Bocca, Pablo Romero, Gerardo Rubino

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Friday, September 25, 2009
8:30AM - 10:30AM
Sala G3

Technical Session 4: Traffic control

Early traffic classification using Support Vector Machines

Gabriel Gómez Sena, Pablo Belzarena

MONTE: An Implementation of an MPLS Online Traffic Engineering Tool

Isabel Amigo, Bernardo Cabrera, Juan Schandy, Pablo Belzarena, Gabriel Gomez

Evaluating the Impact of an Acknowledgment Strategy for APRP

Cristina M. Nunes, Eduardo Link, Fernando Luís Dotti

2:00PM - 3:00PM
Sala G3

Plenary talk

Pricing in telecommunication networks: from congestion control and incentives design to competition among providers

by Bruno Tuffin

The Internet has experienced a tremendous success. Starting from an academic (and somewhat free) communication network, it has been expanded to commercial purposes and has led to congestion. The way customers are currently charged is based on a so-called flat-rate price: they pay a fixed subscription fee to an Internet Service Provider (ISP) and have an unlimited access to the network. This simple and attractive method is nonetheless unfair since it does not discriminate users. Introducing new pricing schemes seems a valuable option for allowing congestion control and service differentiation among users or applications. While congestion hardly occur in the backbone network, we still have to investigate ways to control it in access networks, the so-called last mile problem, with a special emphasis on wireless. Note also that even in uncongested networks, service providers are increasingly leaning toward service differentiation, in order to introduce fairness between users, and to increase and control their benefits. The challenge is therefore to design a pricing scheme representing a good trade-off between economic efficiency and engineering simplicity and that both users and providers would accept. In other contexts, pricing seems an appropriate way to incentivize users to participate by rewarding them in situations where each new user introduces an added-value to the network capability, such as for example in ad hoc networks or peer to peer networks. A currently new research direction is from the observation that there is not only a relation between customers and

providers, but also a competition among providers and heterogeneous technologies, and this aspect needs to be integrated in the models and proposals. A typical example is the competition for access points at a WiFi hotspot, or the choice between different access media (WiFi, WiMax, UMTS, etc.). Similarly, pricing is also now a requirement among competitive providers themselves, which need to exchange traffic to ensure end-to-end delivery. Those points are still in their infancy and we will introduce the challenges and current proposals.

This talk is at the heart of cross-disciplinary and novel aspects of networks and system management, on the economics of infrastructure management. It involves networking techniques, quantitative network modeling and model evaluation methods, economy themes, game theory, control theory and optimisation.

3:00PM - 04:00PM
Sala G3

Technical Session 5: QoE models

Enhancements to the Opinion Model for Video-Telephony Applications

Jose Joskowicz, J. Carlos López Ardao

A new user behaviour model and QoE determination on Short-Message-Service

Marcelo Fiori, Julio Fitipaldo