



Invited Talk: Research on the Next Generation Internet

By Dr. Arjan Durresi

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Building D, Room D-36

Abstract: The Internet, the greatest technological invention of our times, has become a necessity in every sector of our society. Nevertheless, the network architecture of the Internet is reaching its limits, so we must find new ways to improve its security, mobility, and accessibility. The research community is working to design the Internet of the twenty-first century, by focusing on the desirable architectural functionalities. In this talk I will identify several problems with today's Internet, as well as major issues and challenges about the design of the Future Internet. The next generation Internet has to be commerce friendly and secure. It should allow receivers to set policies for how and where they receive their information. The next generation Internet should be designed for mobile objects. Naming, addressing architecture, and routing have to be such that these objects can move and decide how and where they want to receive their Internet traffic with full rights of privacy of their location, if desired. I will also talk about our ideas and solutions for a new networking architecture. Our framework is based on a recursive hierarchy of realms, which follows the organizational structure of commercial organizations. The new architecture enables network scalability, service flexibility, node mobility and personalized security.

Bio: Dr. Durresi is an Associate Professor in the Department of Computer and Information Science at Indiana University Purdue University at Indianapolis, USA. His research interests include: network architectures, telecommunications, wireless, and security, with emphasis on heterogeneous wireless networks, computer and network security, congestion control, traffic management, optical networks, satellite networks, and performance testing. He has published over fifty articles in journals and eighty in conference proceedings in the above areas. Dr. Durresi is the recipient of various research awards. His research has been funded by NSF, the States of Ohio and Louisiana, as well as by university and industry sources.

Dr. Durresi serves as Area Editor of Ad Hoc Networks Journal. He has been Guest Editor for several international journals. Dr. Durresi has organized several international conferences and workshops. He is the Co-Chair of the 23rd IEEE AINA 2009, and Program Co-Chair of ARES 2009. Dr. Durresi is a Yamacraw Distinguished Speaker (2003); he was one of the three keynote speakers of IEEE AINA 2007.