IEEE KITCHENER-WATERLOO

IEEE MTT-Chapter Presentation

Prof. A. Boukerche

University of Ottawa

"Message Traffic and Congestion Control Capabilities in Mobile Ad Hoc Networks"

Abstract:

The talk is an overview on major research projects related to wireless multimedia systems, wireless and mobile networking and a distributed management and security system for mobile phone operations which we are currently investigating at PARADISE Research Lab, U-Ottawa. Node congestion problem in mobile and wireless ad hoc networks is also tackled.

Frequent topology changes caused by node mobility in mobile and wireless ad hoc networks make routing in ad hoc wireless networks a challenging problem. Message routing requires mobile hosts to act as routers, by means of store and forward mechanisms. However, limitations on capabilities of mobiles require a control on node congestion due to message forwarding. We shall discuss the message traffic and congestion control mechanisms and show how they can improve and reduce the overhead of both proactive and reactive ad hoc routing protocols.

The talk also introduces SWiMNet, a high-performance simulation testbed for large-scale wireless and mobile networks we have developed. This testbed allows very detailed and realistic model specifications. It facilitates and enables the evaluation and design of new protocols and applications for future generations of mobile ad hoc network technologies.

Biography:

Prof. A. Boukerche has recently joined the University of Ottawa as a Canada Research Chair in Large-Scale Distributed Interactive Simulation and Wireless and Mobile Computing. Prior to this, he was Faculty Member at the Dept. of Computer Sciences, University of North Texas. He also worked as a Senior Research Scientist at Metron Corp. located in San Diego, California, where he was leading several US-DoD projects on data distribution management for large-scale distributed and interactive systems. He also worked as a Visiting Scientist at Caltech/JPL-NASA, where he contributed to a project centeredon the specification and verification of the software used to control interplanetary spacecraft operated by JPL/NASA Laboratory. He is the Founding Director of PARADISE Research Lab at Ottawa U. His current research interests include large-scale distributed interactive simulation, distributed and mobile computing, wireless communication, networking, wireless ad hoc and sensor networks, wireless multimedia, and wireless network security.Dr. Boukerche serves on the IEEE TFCC Executive committee, an IEEE Computer Society Distinguished Lecturer. He also served as an Associate Editor for ACM/Kluwer Wireless Networks, the Journal of Parallel and Distributed Computing (JPDC), and the SCS Transactions on Modeling & Simulation.

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TIME: 2:00 pm

LOCATION: DC 1331, University of Waterloo

Invited by Prof.Karray

Electrical & Computer Engineering

IEEE Presentation