

10/6/2008,

We would like to thank all the reviewers who served in the selection committee for their hard work:

Yoonsuck Choe, Texas A&M University
Byung Kyu Choi, Michigan Tech.
Young B. Choi, James Madison University
Eun Young Kang, California State University, Los Angeles
Jaeyeon Jung, Intel
Yoochwan Kim, University of Nevada, Las Vegas
Taek Jin Kwon, Telcordia
Bong Jun Ko, IBM T.J. Watson Research Center
Tae Hwan Oh, Rockwell Collins

This year we have received many high quality applications. I am pleased to announce the following recipients for the 2008 KOCSEA/Moon Jung Chung Scholarship/Poster Competition.

First Place: **Minwoo Park**, Pennsylvania State University

Prize: \$1,000

Poster Title: Lattice Detection of Urban View of Buildings

Poster Abstract:

A novel and robust computational framework for automatic detection of 2D lattice in urban view is presented. 2D crystallographic group theory provides a theoretical justification of degree-4 Markov Random Field (MRF) for detecting lattice. The lattice units are proposed through unsupervised clustering of interest points and voting for consistent lattice units. The proposed lattice basis vectors and pattern element contribute to the pair-wise compatibility and joint compatibility functions in a degree-4 MRF. This allows us to formulate lattice detection as an optimization problem, solved within the MRF using Belief Propagation. Results demonstrate significant advances over the state-of-the-art algorithm.

Runner-up One: **Mira Yun**, George Washington University

Prize: \$500

Poster Title: Dynamic Channel-Assignment and Scheduling considering Channel Switching Overhead in Wireless Mesh Networks

Poster Abstract:

Despite the vast amount of research efforts in developing efficient channel assignment and scheduling algorithms in multi-channel multi-radio WMNs, none of them considers the overhead incurred from switching radios dynamically from one channel to another into account. In a 802.11 card, the hardware switching delay is typically in the order of a few hundreds of microseconds to a few milliseconds, and the switching between two different bands (e.g., 5GHz for 802.11a and 2.4GHz for 802.11b/g) may result in even a larger delay. In this poster, we take the switching delay into account in the design of channel assignment and scheduling and present two algorithms: a centralized one and a fully distributed one. The performance of our proposed algorithms is analyzed using a discrete-event simulator that we developed. The simulation results show that the network throughput and the end-to-end delay can be significantly improved using our algorithms. Some theoretical issues are also addressed.

Runner-up Two: **Seung Hoon Lee**, Department of Computer Science, UCLA

Prize: \$500

Poster Title: Content Distribution in VANETs using Network Coding: The Effect of Disk I/O and Processing O/H

Poster Abstract:

Content distribution in vehicular networks poses a great challenge due to network dynamics and high speed mobility. In recent years, network coding has been shown to efficiently support distribution of content in such dynamic environments, thereby considerably enhancing the performance. However, the related work in the literature has mostly focused on theoretic or algorithmic aspects of network coding. In this paper, we provide an in-depth analysis on the implementation issues of network coding in wireless networks. First, we develop an abstract model of a general network coding process and evaluate the validity of the model via several experiments on real systems. Second, we propose schemes that considerably improve the performance of network coding under resource constrained environments. We implement our overhead model in a network simulator and evaluate these schemes in a large scale vehicular network.

Jungwoo Ryoo, Ph.D.

2008 KOCSEA-Moon Jung Chung Scholarship/Poster Competition Committee Chair