

*The Electrical and Computer Engineering Program presents  
ECEN Seminar Series*

# Cooperation Strategies for the Butterfly Network: Neutralization, Feedback, and Computation

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**Wednesday, 21 November 2012, 12 – 1 p.m.**

**Lecture Hall 144**

*Light lunch will be served*

A butterfly network (BFN) consisting of 2 source nodes, 2 destination nodes, and a relay, with relay-source feedback is considered. Transmission schemes are proposed for this setup, which exploit feedback based on compute-forward using nested-lattice codes. A novel nested-lattice interference neutralization strategy is also proposed. The performance of these schemes is compared and discussed, and it is shown that these schemes can provide net-gain, i.e., the gain in the sum-capacity gain is larger than the number of feedback bits invested.



Anas Chaaban was born in Doha, Qatar, on December 11, 1984. He received his Maitrise es Sciences degree in electronics, and his M.Sc. degree in communications technology from the Lebanese University, Lebanon, in 2006, and from the University of Ulm, Germany, in 2009, respectively. During 2008-2009, he was with the Daimler research group on machine vision, Ulm, Germany. He was a Research Assistant with the Emmy-Noether Research Group on Wireless Networks at the University of Ulm, Germany, during 2009-2011, which relocated to Ruhr-University Bochum, Germany, in 2011. His current research interests are in the area of network information theory with main focus on relaying and interference management.

**FOR MORE INFORMATION:**

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