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**SEMINAR**

**Speaker:** Jin Cao and Aiyou Chen  
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**Title:** Probabilistic Counting over Distributed Packet Streams in High Speed Networks

**Date:** Wednesday, November 7, 2007

**Time:** 3:20 PM

**Place:** 552 Hill Center

**ABSTRACT**

Many aspects of network management, such as network provisioning, traffic engineering, and traffic anomaly detection, rely on knowing the traffic flow statistics between origin and destination (OD) node pairs. However, rapid growth of networks in size and bandwidth makes obtaining accurate OD traffic flow statistics very challenging. In this talk, we address the problem of OD flow and byte counting from the point view of streaming data analysis. Our method constructs a compact sketch via hashing and randomization for each data stream, and derives efficient estimates of the OD counts, using the pair of sketches received at a central location. We show how our method can be generalized for counting unique flows across more than two distributed data streams, and derive accurate approximation of the error distribution of our estimates. We demonstrate our algorithms yields much more accurate estimates than existing methods including network tomography.

**Refreshments:** 2:50 PM in 502 Hill Center