DO&IT Seminar Series
http://www.rhsmith.umd.edu/doit/events/seminars.aspx

Speaker: Shawn Mankad

Date: Tuesday, January 15, 2013

Time: 11:00-12:15 pm

Location: Room 1505

Title: Analytics for Higher Order and Dynamic Network Data with Application to Financial Markets

Abstract:

In this talk we introduce new methodology to address challenges of analyzing the increasingly vast and complex data encountered in Finance, Economics and Marketing. In particular, we consider analyzing collections of data matrices (data arrays) that are typically organized from transaction-level data, and introduce a model for non-negative matrix factorization that captures how structure evolves through time or in different conditions. The model decomposes the data into two factors: a basis common to all data matrices, and a coefficient matrix that varies for each data matrix. A regularization is utilized within the framework of non-negative matrix factorization to encourage local smoothness of the coefficient matrix. The proposed methodology is applied to time coarse citation network and interbank bilateral lending data. In the latter application, we investigate how lending dynamics in the interbank market changed during the sub-prime crisis.