Matrix Computations and Scientific Computing Seminar

Organizer: Jim Demmel and Ming Gu

Wednesday, 11:00 am–12:00 pm, 380 Soda Hall

Feb 4 **Michael W. Mahoney**, UC Berkeley

Spectral Graph Methods: Local and Global Optimization for Real Data Graphs

Spectral graph methods are common in many applications, and they have been studied from a wide range of perspectives. Here, we will provide an overview of several recent directions aimed at extending existing spectral graph methods to deal with realistic noise properties and heterogeneities in matrices and graphs arising in large-scale data analysis and machine learning applications. In many cases, this has to do with a tension between small-scale or local structure and large-scale or global structure. Motivating empirical results, algorithmic and statistical challenges, as well as interesting directions for scientific computing researchers will be highlighted.