Matrix Computations and Scientific Computing Seminar

Organizer: J. Demmel and M. Gu

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

Mar 22 **Daniel Robinson**, Johns Hopkins University

Scalable optimization algorithms for large-scale subspace clustering

I present recent work on the design of scalable optimization algorithms for aiding in the big data task of subspace clustering. In particular, I will describe three approaches that we recently developed to solve optimization problems constructed from the so-called self-expressiveness property of data that lies in the union of low-dimensional subspaces. Sources of such data include multi-class clustering and motion segmentation. Our optimization algorithms achieve scalability by leveraging three features: a rapidly adapting active-set approach, a greedy optimization method, and a divide-and-conquer technique. Numerical results demonstrate the scalability of our approaches.