Matrix Computations & Scientific Computing Seminar

Organizer(s): James Demmel, Ming Gu & Beresford Parlett

Wednesday, 11:00am–12:00pm, 380 Soda

Nov. 18 **Cinna Wu**, UC Berkeley

ParNes: A new algorithm for compressed sensing problems

In compressed sensing we ask the following question: Given an underdetermined matrix $A \in \mathbb{R}^{m \times n}$ and a vector $b \in \mathbb{R}^m$, find the sparsest x satisfying $Ax = b$. In practice, the vector b often consists of possibly noisy measurements. In this case, we seek the sparsest x satisfying $\|Ax - b\|_2 \leq \sigma$ where σ is a bound on the noise. ParNes is a new algorithm for solving such problems. It has been experimentally shown to be competitive with currently available state-of-the-art methods. Here, a brief introduction to compressed sensing is given along with an introduction to ParNes.