APPLIED MATHEMATICS COLLOQUIUM

Geometric graph-based methods for high dimensional data

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Abstract: We present new methods for segmentation of large datasets with graph based structure. The method combines ideas from classical nonlinear PDE-based image segmentation with fast and accessible linear algebra methods for computing information about the spectrum of the graph Laplacian. The goal of the algorithms is to solve semi-supervised and unsupervised graph cut optimization problems. I will present results for image processing applications such as image labeling and hyperspectral video segmentation, and results from machine learning and community detection in social networks, including modularity optimization posed as a graph total variation minimization problem.

Monday April 11, 2016
11:00 AM-12:00 PM
Room 2-361

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