



THE UNIVERSITY OF
CHICAGO

Department of Statistics

MASTER'S THESIS PRESENTATION

CHENG GAO

Department of Statistics
The University of Chicago

**Generalized Semi-Supervised Learning on Undirected
Graphs with Multiscale Spectral Graph Wavelet
Transformation**

MONDAY, February 18, 2013, at 2:00 PM
110 Eckhart Hall, 5734 S. University Avenue

ABSTRACT

Most of the current graph-based approaches to semi-supervised learning are based on the assumption that the target function is smooth with respect to the graph topology. However, the type of functions encountered in many applications often do change abruptly in certain parts of the graph. To better accommodate this situation in this thesis we investigate the use of multiscale spectral graph wavelets, recently introduced by Hammond et al., combined with an ℓ_1/ℓ_p mixed norm regularizer to enforce group sparsity on the wavelet coefficients. Experiments are presented, using both semi-supervised squared loss regression and the semi-supervised support vector machine with ℓ_1/ℓ_∞ penalty.

For information about building access for persons with disabilities, please contact Matt Johnston at 773.702-0541 or send an email to mhj@galton.uchicago.edu. If you wish to subscribe to our email list, please visit the following web site: <https://lists.uchicago.edu/web/arc/statseminars>.