Image Analysis Seminar - Department of Mathematics

Date and Time: Monday September 24, 2012, 2-3 PM  
Location: PGH 646

Title: A Batch Mode Active Learning Framework for Computational Histology  
Speaker: Raghav Padmanabhan, University of Houston

Abstracts: Tissue micro-environments of critical interest like tumors, stem-cell niches, brain tissue surrounding implanted neuroprosthetic devices and glands have components that have intricate structure and harbor complex processes. Understanding the events and perturbations that occur in these micro-environments entails selective molecular imaging of the tissues, accurately delineating all the structures of interest, and classifying cell types with utmost reliability. In this talk, I will describe some of the problems associated with cell classification in large-scale histocytometric studies and describe a novel batch-mode active learning framework that solves these problems elegantly. The algorithm leverages the advances made in the fields of optimal experimental design and submodular functions, and is packaged in FARSIGHT - a usable & open-source software system - that makes it attractive for use in the clinic. I will present results that show the efficacy of the framework and its applicability to a wide variety of problems in histology.

Upcoming talks at: http://www.math.uh.edu/~dlabate/ImSeminar.html