

Department of Applied and Computational Mathematics and Statistics Colloquium

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will give a lecture entitled:

Probabilistic Mixture Regression Models for Alignment of LC-MS Data

Abstract

In this talk, we will present a probabilistic mixture regression model (PMRM) for alignment of liquid chromatography-mass spectrometry (LC-MS) data with respect to retention time (RT) points. The expectation maximization (EM) algorithm is used to estimate the joint parameters of spline-based mixture regression models and prior transformation density models where the latter accounts for the variability in RT points and peak intensities. The applicability of PMRM for alignment of LC-MS data is demonstrated through three data sets. The performance of PMRM is compared with other alignment approaches including dynamic time warping, correlation optimized warping, and continuous profile model in terms of coefficient variation of replicate LC-MS runs and accuracy in detecting differentially abundant peptides/proteins.



**Monday, October 24th, 2011
4:00 p.m. to 5:00 p.m.
127 Hayes-Healy Center**