MACQUARIE UNIVERSITY
STATISTICS DEPARTMENT SEMINAR

Speaker: A/Prof Polina Golland, Computer Science and Artificial Intelligence Laboratory (CSAIL), Massachusetts Institute of Technology

Date: Tuesday 16 July 2013, Time 2pm
Venue: E4A523

Title: Hierarchical Model of Variability for Exploratory Analysis of fMRI Data

Abstract:
We present an exploratory method for simultaneous parcellation of multisubject fMRI data into functionally coherent areas. Our motivation comes from visual fMRI studies with increasingly large number of image categories. The method is based on a hierarchical probabilistic model that accounts for both inter-subject and intra-subject forms of variability in fMRI responses. The resulting algorithm finds a functional parcellation of the individual brains along with a set of population-level clusters. The model eliminates the need for spatial normalization while still enabling us to fuse data from multiple subjects.

Joint work with Danial Lashkari, Ed Vul and Nancy Kanwisher.

About the speaker:
Polina Golland is an Associate Professor of Electrical Engineering and Computer Science at MIT. She received BSc and Masters in Computer Science from Technion, Israel in 1993 and 1995, and a PhD in Electrical Engineering and Computer Science from MIT in 2001. Her research interests span computer vision and machine learning. Her current work focuses on developing statistical analysis methods for characterization of biological processes using images (from MRI to microscopy) as a source of information.