

DEPARTMENT OF STATISTICS



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*Some insights into transfer learning under label shift
and posterior drift*

Wednesday, November 10, 2021
11:45 AM EST

Zoom Meeting: Meeting ID: 924 8283 7055
Password: 378160

<https://rutgers.zoom.us/j/92482837055?pwd=TktKVVU2ZlZnZQbm1TNUs3K0pmZz09>

Virtual Coffee session before the seminar at 11:30 AM EST

Abstract: Transfer learning where one strives to improve prediction (and inference) on a data-poor target domain by using auxiliary data from a data-rich source domain has been the subject of much recent investigation in both the machine learning and statistics literatures. In this talk I will present two different works: the first will be a characterization of optimal estimation rates in the label shift problem where the distribution of the label Y differs between source and target, and the second, a new model and method for posterior drift where the regression function in the target domain is modeled as a linear adjustment (on an appropriate scale) of that in the source domain, an idea that inherits the simplicity and usefulness of GLM and the accelerated failure time models from the classical statistics literature. The method shows good promise for many real world applications, especially in epidemiology, genetics and biomedicine, as will be illustrated by an analysis of UK Biobank data.

This is joint work with Subha Maity, Yuekai Sun, Diptavo Dutta and Jonathan Terhorst.

Bio: Mouli Banerjee was born and raised in India where he completed both his Bachelors and Masters in Statistics at the Indian Statistical Institute, Kolkata. He obtained his Ph.D. from the Statistics department at University of Washington, Seattle, in December 2000, served as lecturer there for Winter and Spring quarters, 2001, and joined University of Michigan in Fall 2001. Mouli's research interests are in the fields of non-standard problems, empirical process theory, threshold and boundary estimation, high dimensional models, and more recently transfer learning, domain adaptation and other problems at the interface of statistics and ML. His main contributions to date are in the areas of inference under shape-restrictions and investigation of non-differentiable models in low and high-dimensional settings. Mouli is the recipient of the 2011 IISA Young Investigators Award, and a fellow of both the IMS (Institute of Mathematical Statistics) and ASA (American Statistical Association). He has a broad range of interests outside of statistics including classical music, literature, history, philosophy, physics, poetry, ancestral genetics and fine beverages. He is, also, most emphatically, a gourmet (and gourmand) and believes that a life without good food is a life less lived.

