

Statistical Machine Learning Seminar
Hosted by Department of Mathematical Sciences

- Date: Tuesday, November 8, 2016
- Time: 12:00-1:00
- Room: WH-100E
- Speaker: Chengbin Deng (Geography at Binghamton University)
- Title: Use of Big Geospatial Data for Better Mapping and Understanding Urban Environment

Abstract

Understanding urban environments and their spatio-temporal changes is essential for regional and local planning and environmental management. With the emergence of large volumes of various earth observation data, it is important to take advantage of such datasets to improve land cover monitoring, especially the detection for the urbanization process. To reach this goal, a new image processing approach that employs all available historical Landsat images is proposed, and tested in Broome County, NY. Not only can this method support sub-pixel land cover mapping (as in traditional studies), but it also can derive the magnitude, timing and duration of urbanization (which cannot be provided in traditional studies). The Broome County experiment shows that the performance of this processing technique is comparable with, and even slightly better than, the existing data product. The results derived from machine learning methods are also compared, and the land cover information extracted from various satellite images is further utilized in support of urban sustainability studies.

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