Statistics Seminar Series

Using Supervised and Unsupervised Methods in Remote Sensing: Examples, Perspectives, and Opportunities

Mark Friedl

Department of Geography & Center for Remote Sensing

Boston University

Thursday, March 20, 2003, 4:00-5:00pm

Mathematics and Computer Science (MCS) Building, Room 149

111 Cummington Street, Boston

Tea and Cookies at 3:30pm in MCS 153

Abstract: Data from Earth observation satellites are providing unprecedented volumes of data regarding the state of the Earths oceans, atmosphere, and land surfaces. The volume of these data, in combination with their spatial, multispectral, and multitemporal attributes create many data analysis challenges for remote sensing scientists. In particular, a variety of research opportunities exist at the interface between statistics and remote sensing. This seminar will provide an overview of recent experiences using data mining and machine learning techniques in remote sensing. The first part of the talk will specifically discuss recent efforts to use supervised methods (regression trees, decision trees, boosting and bagging) to both classify global land cover and predict forest biomass over large areas from remotely sensed data. In the second part of the talk, emphasis will be placed on the use of unsupervised methods (independent component analysis and canonical correlation analysis) for exploring and mining complex space time data sets. Throughout, outstanding issues and unresolved technical questions requiring further investigation and input from statisticians will be identified.

For directions and maps, please see *http://math.bu.edu/research/statistics/statseminar.html*. For other information, please contact Eric Kolaczyk (*kolaczyk@math.bu.edu*) or the main department office at (617)353-2560.