

## Computer Science Seminar Series, 2010

### National Capital Region

## Paired Learners for Concept Drift

**Speaker: Dr. Mark Maloof**  
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**Friday, November 12, 2010**  
**1:00PM- 2:00PM, NVC 325**

### Abstract

Concept drift refers to a setting in which an online learner must acquire a target concept that changes or drifts over time. Such a setting is also known as shifting targets, time varying data streams, and non-stationary environments. In this talk, I will present two ensemble methods for concept drift, dynamic weighted majority and a paired learners. Not only will I present empirical results for these learners on a number of standard data sets and problems, but I will also present results of direct comparison to the streaming ensemble algorithm and the accuracy-weighted ensemble. The results of the paired learner in particular raise questions about the utility of learning in chunks and of the data sets the community uses to evaluate learners for concept drift.

### Biography

Mark Maloof is an associate professor in the Department of Computer Science at Georgetown University. His research interests include machine learning, data mining, on-line learning algorithms, concept drift, and applications of machine learning and data mining to computer security. He led the effort that established Georgetown's first graduate programs in computer science, and is the director of the department's Master's and Ph.D. programs. In 2004, he shared with Zico Kolter the award for the best application paper at KDD for their work on detecting malicious executables. In 2007, he shared with Greg Stephens a Program Innovation Award from the MITRE Corporation for their work on detecting insider threats.