Time & Location: March 17, 2014 at 9:00 AM in Engineering II IEMS Conference Room
Title: An Unsupervised Consensus Control Chart Pattern Recognition Framework

Early identification and detection of abnormal time series patterns is vital for a number of manufacturing. Slide shifts and alterations of time series patterns might be indicative of some anomaly in the production process, such as machinery malfunction. Usually due to the continuous flow of data monitoring of manufacturing processes requires automated Control Chart Pattern Recognition (CCPR) algorithms. The majority of CCPR literature consists of supervised classification algorithms. Less studies consider unsupervised versions of the problem. Despite the profound advantage of unsupervised methodology for less manual data labeling their use is limited due to the fact that their performance is not robust enough for practical purposes. In this study we propose the use of a consensus clustering framework. Computational results show robust behavior compared to individual clustering algorithms.

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Approved for distribution by Petros Xanthopoulos, Committee Chair, on February 25, 2014.

The public is welcome to attend.