

UW Center for Pattern Analysis and Machine Intelligence (CPAMI)

Graduate Seminar Series

Greedy Nyström Approximation

Speaker: Ahmed Farahat

Date: June 8, 2011

Time: 4pm- 5pm

Place: E5 (5128)

Abstract :

The Nyström method is an efficient technique for obtaining a low-rank approximation of a large kernel matrix based on a subset of its columns. The quality of the Nyström approximation highly depends on the subset of columns used, which are usually selected using random sampling. This work presents a novel recursive algorithm for calculating the Nyström approximation, and an effective greedy criterion for column selection. Further, a very efficient variant is proposed for greedy sampling, which works on random partitions of data instances. Experiments on benchmark data sets show that the proposed greedy algorithms achieve significant improvements in approximating kernel matrices, with minimum overhead in run time.