DEPARTMENT OF APPLIED MATHEMATICS
應 用 數 學 系

The Hong Kong Polytechnic University
Department of Applied Mathematics

Colloquium

Separable Nonnegative Matrix Factorization

by

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Abstract

Nonnegative Matrix Factorization (NMF) is a linear dimensionality reduction technique for nonnegative data. NMF has become a very popular technique in data mining and machine learning because it automatically extracts meaningful features through a sparse and part-based representation. NMF is an NP-hard problem consisting in approximating a nonnegative data matrix with the product of two nonnegative matrices. In this talk, we first introduce NMF and illustrate its usefulness with some application examples. We then focus on the separability assumption that allows to solve the NMF problem in polynomial time. We present several recent algorithms, including geometric algorithms and algorithms based on convex optimization. We illustrate the results with some numerical experiments. This is joint work with Robert Luce (EPFL) and Stephen Vavasis (University of Waterloo).

Date : 21 February, 2017 (Tuesday)
Time : 1:00p.m. – 2:00p.m.
Venue : TU801, The Hong Kong Polytechnic University

*** * * ALL ARE WELCOME * * ***