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Seminar

Constrained Low Rank Approximations for Scalable Data Analytics

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Abstract

Many constrained low rank approximations have been widely utilized in large scale data analytics where the applications reach far beyond the classical areas of scientific computing, e.g. text analysis, social network analysis, computer vision, and bioinformatics.

We discuss some fundamental properties, algorithms, and applications of Nonnegative matrix factorization (NMF) and its variants. We then offer NMF-based methods for efficient and effective hierarchical clustering and topic modeling of large scale data. Our substantial experimental results show that rank-2 NMF based hierarchical and flat topic discovery methods called HierNMF2 and DC (Divide and Conquer)-NMF are superior to other existing methods such as LDA (Latent Dirichlet Allocation) and k-means in terms of both scalability and solution quality. We also discuss Symmetric NMF (SymNMF), which can be used for community detection in network data.

Date :	December 28, 2016 (Wednesday)
Time :	4:30p.m. – 5:30p.m.
Venue :	Room 222, Lady Shaw Building, The Chinese University of Hong Kong

All are Welcome