# Nonnegative Matrix Factorization Models and its Applications

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We discuss nonnegative matrix factorization(NMF) models based on maximum likelihood estimation(MLE). We review some of these models. We link symmetric nonnegative matrix factorization(symNMF) models to graph clustering. We also link some of NMF models with well-known topic analysis such as probabilistic latent semantic analysis and indexing(PLSA/PLSI).