
HAOHAN HUANG, York University, 4700 Keele Street, Toronto, ON
Estimating Value at Risk with Non-negative Matrix Factorization technique

In this talk I will introduce the Non-negative Matrix Factorization (NMF) technique to estimate Value at Risk (VaR). VaR is a very important methodology for measuring portfolio risk in finance. Normally when calculating VaR, we need the correlations between each product in our portfolio. But it's very time-consuming to get the correlations when the number of products is large, besides, the correlation cannot be very precise. The Non-negative Matrix Factorization method has previously been shown to be a useful decomposition for multivariate data. It is developed now to find parts-based, linear representations of non-negative data. Then I use this tool to deal with the data of the portfolio and gladly find I can skip the step of calculating correlations when estimating VaR.