On Two Distinct Sources of Nonidentifiability in LP RGM's

Abstract

there are two types of nonidentifiabilities: subspace nonidentifiability (SN) and model-based (MBN). This paper talks about them.

Introduction

SN has to do with basis corresponding to a specific subspace, MBN has to do with the representation of the latent variables.

SN: we're only able to choose the basis for the eigenspace corresponding to non-unique eigenvalues up to orthogonal transformation

MBN: if $k(X_i, X_j) = X_i^T X_j$, then $k(\textbf{W}X_i, \textbf{W}X_j) = k(X_i, X_j)$ for orthogonal matrices W where $k : \Omega \times \Omega \rightarrow [0, 1]$ is some function of the latent positions

Setting

Draw a bunch of $X_i, ..., X_n$ iid, where $X_i \in \mathbb{R}^d$.
Let $\textbf{P}_{ij} = k(X_i, X_j)$