Parameterized Principal Component Analysis

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Highlights

- A method for manifold approximation where the low dimensional space is a PCA model with the mean and principal vectors modeled as smooth functions of a parameter that depends on the position on the manifold
- Generalizations where the manifold dimension is not constant
- Generalization where the dimensionality of the ambient space is not constant
- Comparison with PCA, Sparse PCA, and independent PCA models across the manifold, for simulated data, faces in the presence of in plane rotation and faces with different out of plane rotations.