CSE472
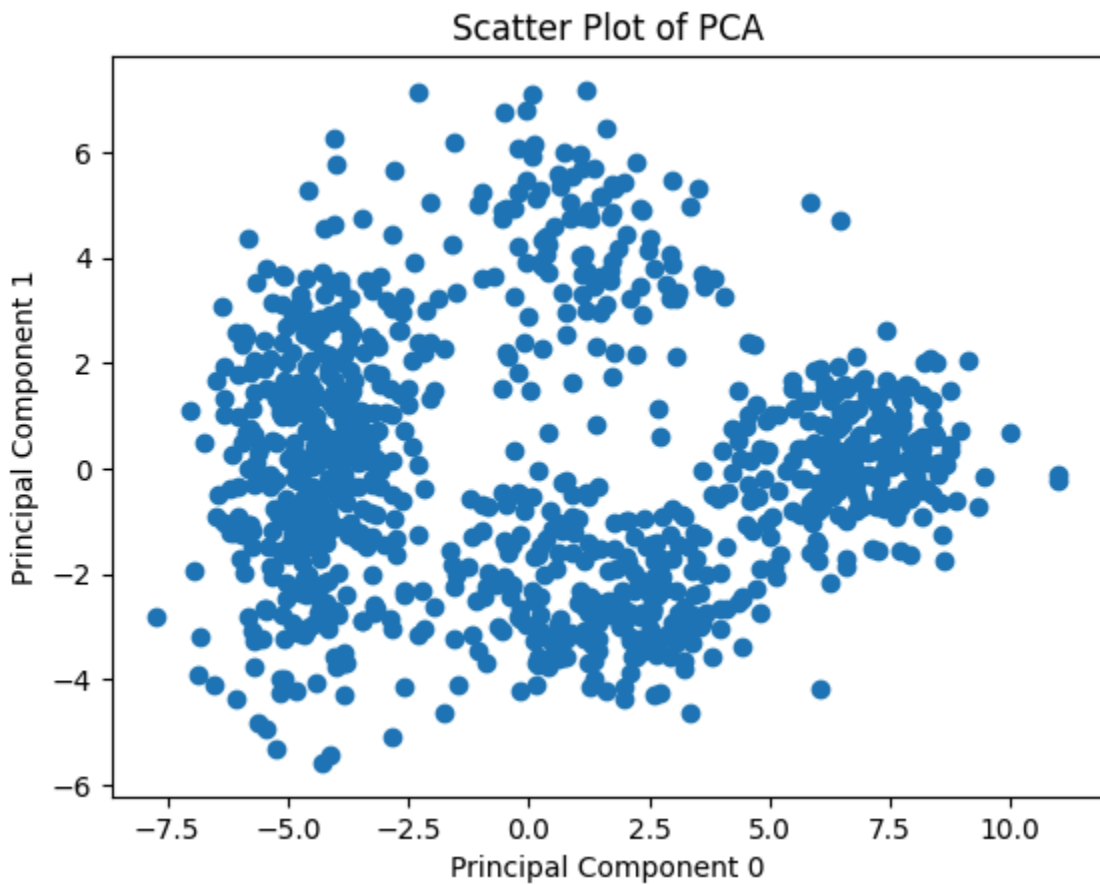
(Machine Learning Sessional)

Assignment 4:
Principal component analysis (PCA) and
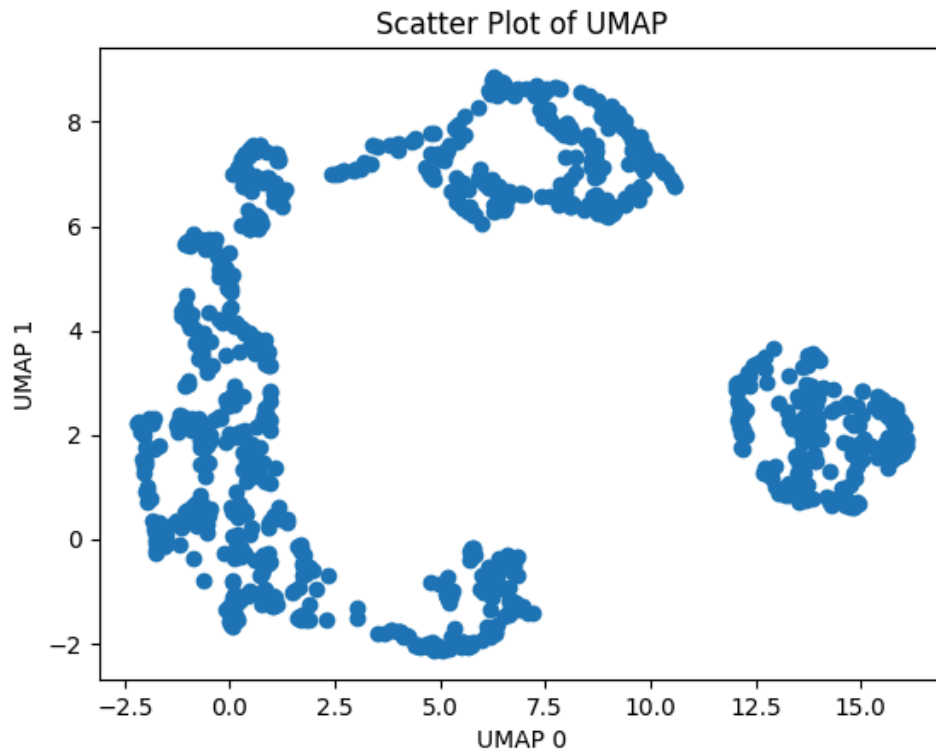## expectation-maximization (EM) algorithm

Wasif Jalal
1905084

Principal Component Analysis (PCA) and EM algorithm for the Poisson mixture model have been implemented and presented in the files 1905084_pca.ipynb and a1905084_em.ipynb.
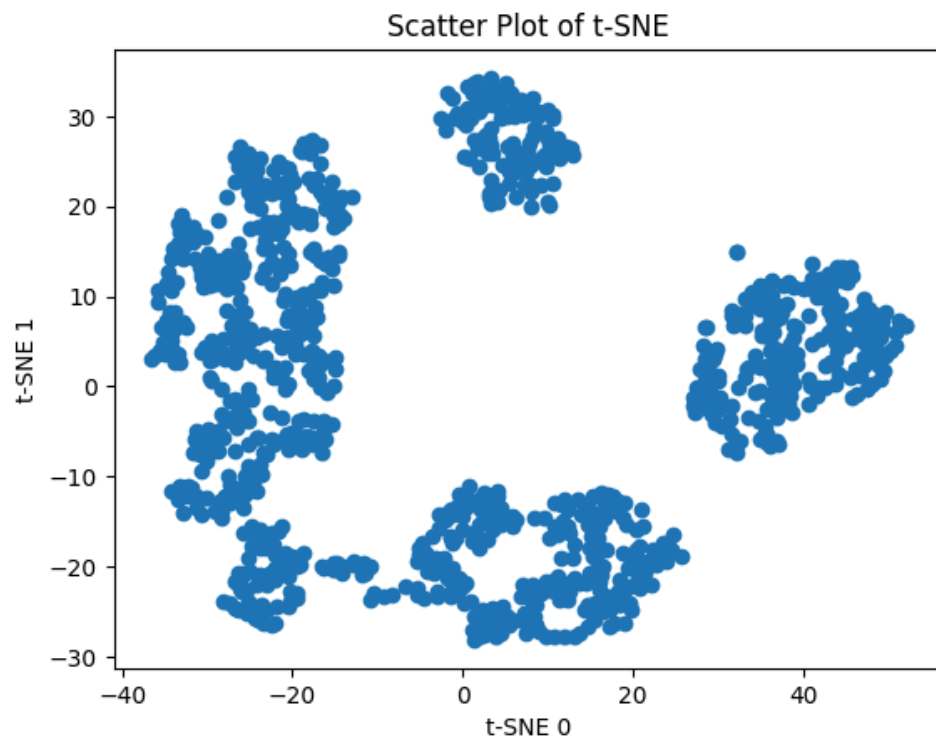
PCA Plot:

UMAP Plot:

Scatter Plot of UMAP

t-SNE Plot:

Scatter Plot of t-SNE

EM Algorithm Results:

```
Estimated means and parameters:

Mean no. of children in families with family planning:     1.7871346428960713
Mean no. of children in families without family planning:  4.914730033999356

Proportion of families with family planning:               0.35737680045789616
Proportion proportion of families without family planning: 0.6426231995421038
```