

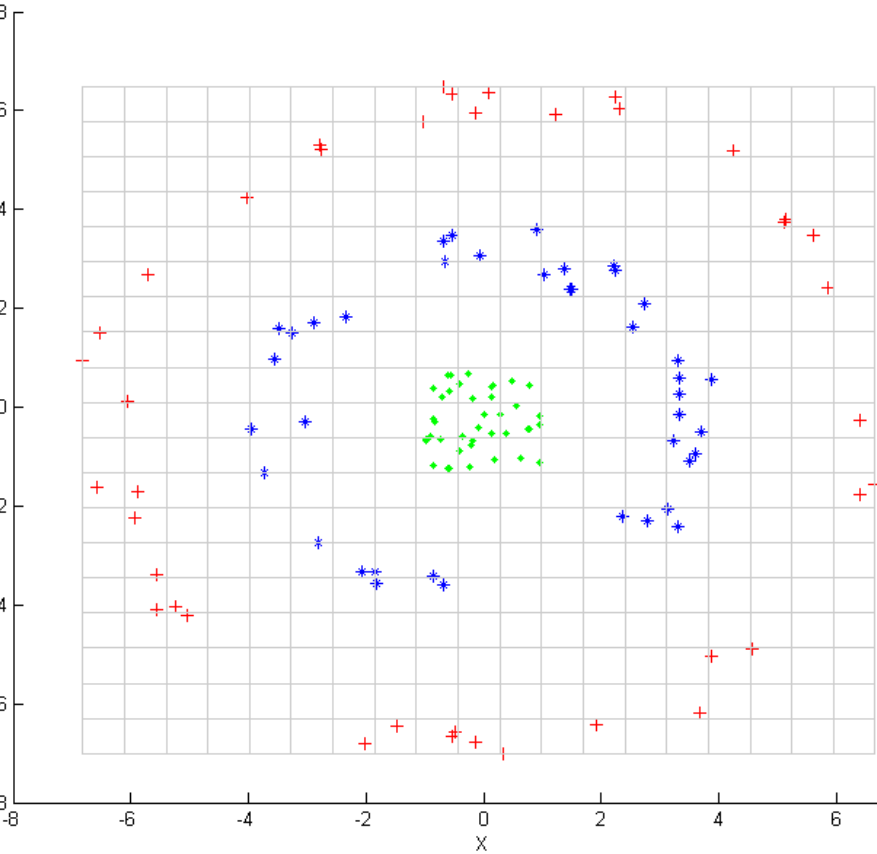
# Lecture 9: Kernel PCA; Factor Analysis

Lester Mackey

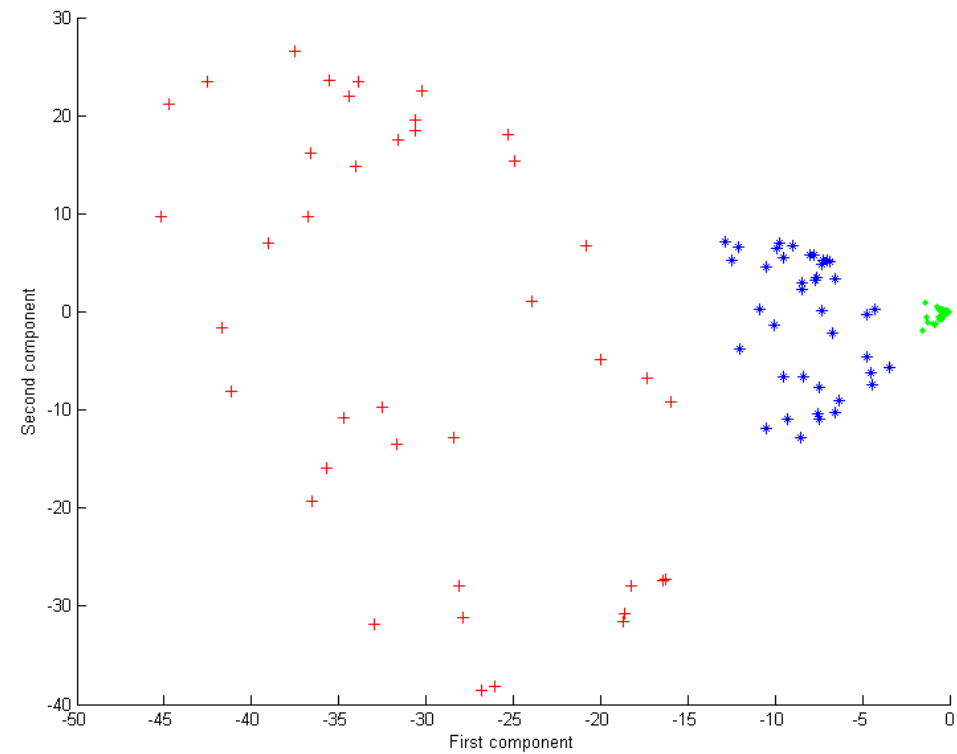
April 28, 2014

# Kernel PCA example

Raw data

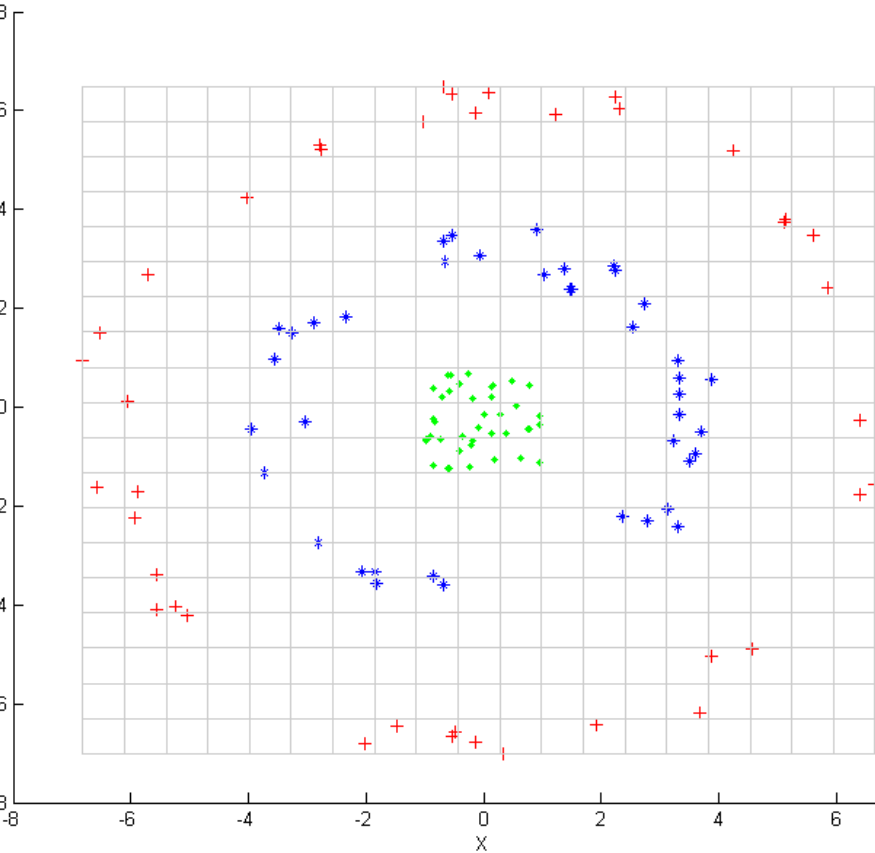


Kernel PCA, Quadratic kernel

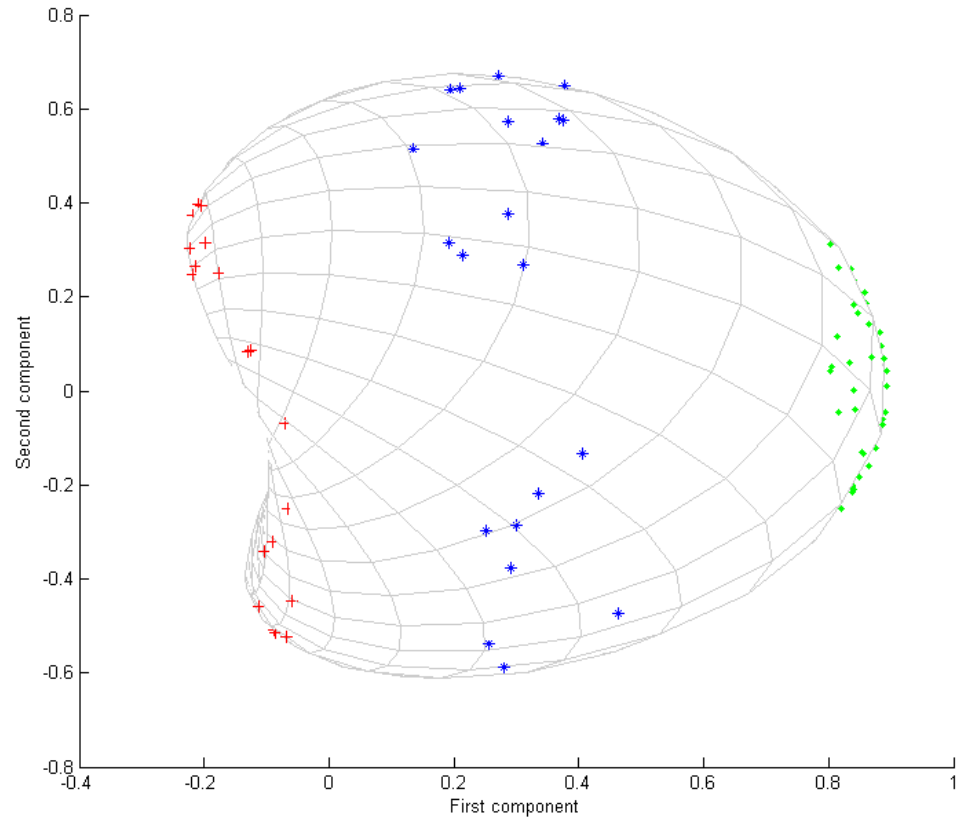


# Kernel PCA example

Raw data

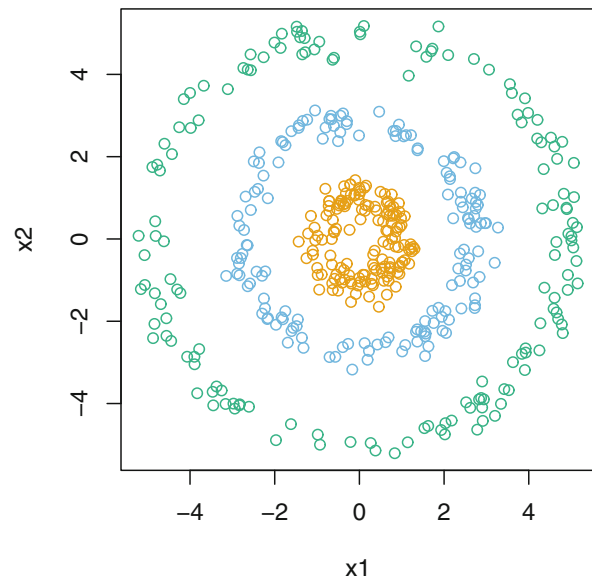
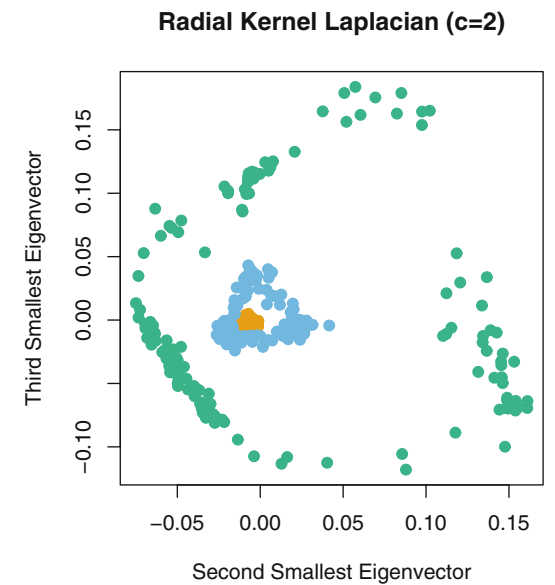
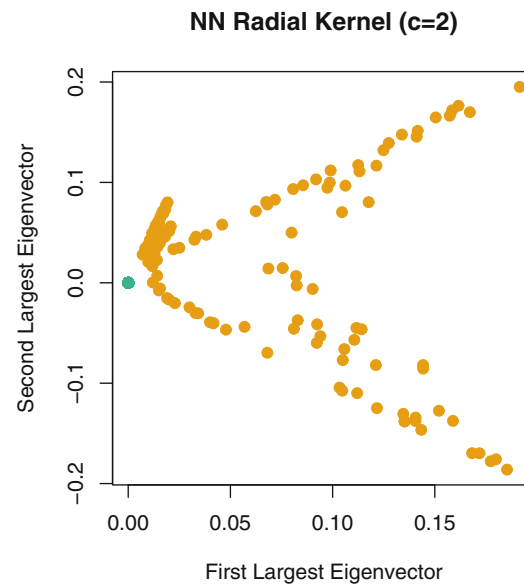
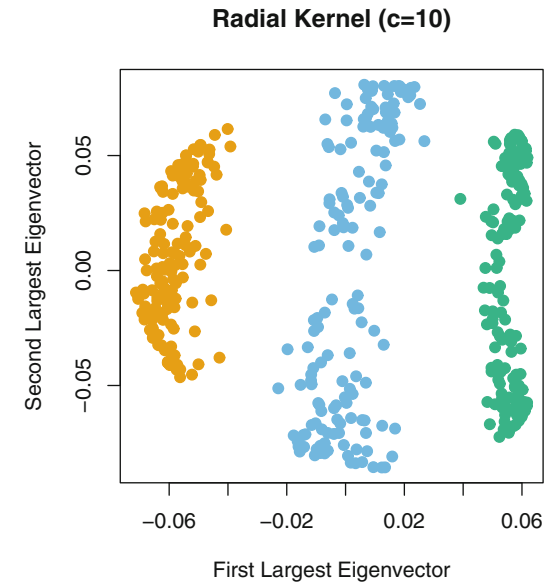
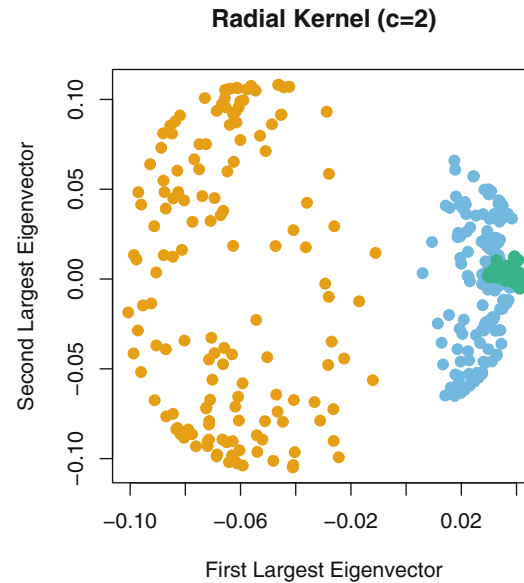


Kernel PCA, Gaussian kernel



# Kernel PCA vs. spectral clustering

- Top: Kernel PCA, Gaussian kernel
- Bottom Middle: Kernel PCA
- Bottom Right:  $L_{un}$  spectral clustering



# Blackboard discussion

- See lecture notes