

Machine Learning

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Content

1. The Big Picture

2. Supervised Learning

- Linear Regression, Logistic Regression, Support Vector Machines, Trees, Random Forests, Boosting, Artificial Neural Networks

3. Unsupervised Learning

- Principal Component Analysis, K-means, Mean Shift

Unsupervised Learning

- Principal Component Analysis (PCA)
- **Clustering**
 - K-Means
 - **Mean-Shift**

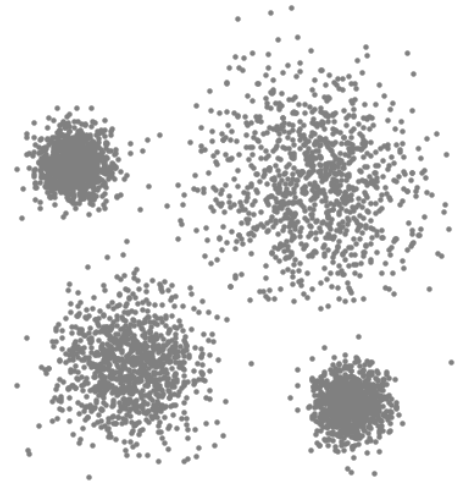
Mean Shift

- Chose a **radius r of the clusters**
- Initialize **centroids** at each example
- **No need** to specify the number of clusters

For each example:

Repeat until convergence:

Compute the **mean** in its cluster with radius r
Shift the cluster to the new mean centroid



Other Clustering methods

- Expectation Maximization (EM)
- Hierarchical Clustering
- Affinity Propagation (AP)
- Etc.