

PSY9511: Seminar 5

Unsupervised learning

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1. Overview of unsupervised learning
2. Clustering
 - K-means
 - Hierarchical
3. Dimensionality reduction
 - Principal component analysis (PCA)
 - Independent component analysis (ICA)
 - Partial least squares (PLS)

Unsupervised learning



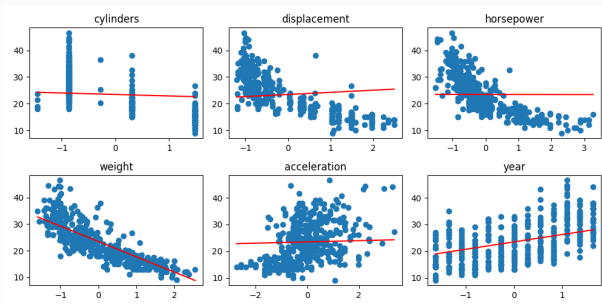
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Supervised learning: Find $\hat{y} = f(X)$

Unsupervised learning: Motivation

Supervised learning: Find $\hat{y} = f(X)$

- Descriptive: Understand the relationship between X and y



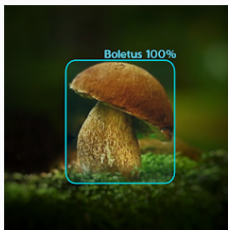
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- Predictive: Predict y given new X .

Unsupervised learning: Motivation

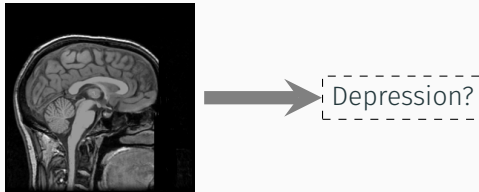
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- Can we find subgroups or interesting axes of variability?



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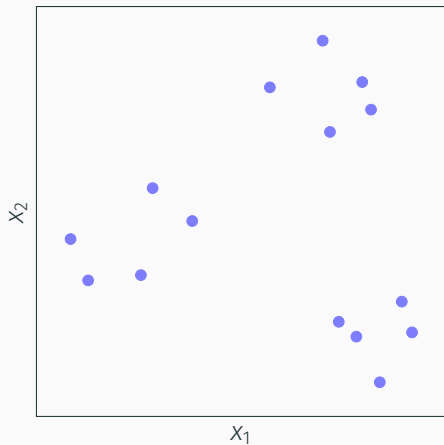
- Can we find subgroups or interesting axes of variability?
- Visualization

Dimensionality reduction

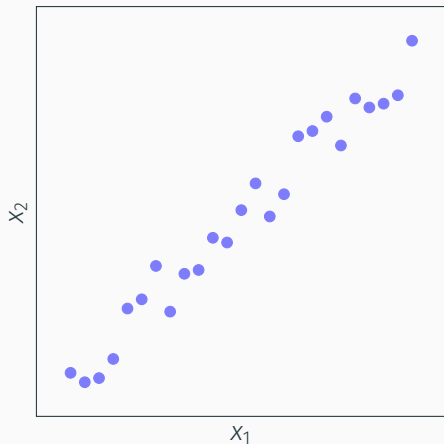


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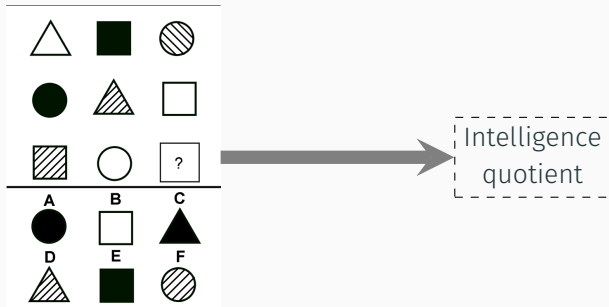
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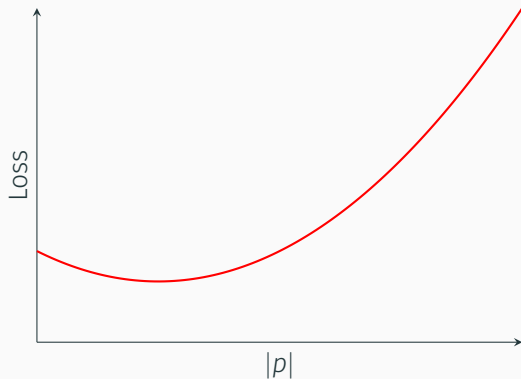
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