Machine Learning

- **Supervised Learning**
    - **Regression and classification problems**
    - **Simple linear regression**
    - **Multiple linear regression**
    - **Ridge regression**
    - **Logistic regression**
    - **K-nearest neighbour**
    - **Naive Bayes classifier**
    - **Linear discriminant analysis**
    - **Support vector machine**
    - **Decision trees**
    - **Bias-variance trade-off**
    - **Cross-validation methods:**
        - **Leave-one-out (LOO) cross-validation**
        - **K-folds cross-validation**
    - **Multi-layer perceptron**
    - **Feed-forward neural network**
- **Unsupervised Learning**
    - **Clustering algorithms:**
        - **K-means/k-medoid**
        - **Hierarchical clustering (top-down, bottom-up, single-linkage, multiple-linkage)**
    - **Dimensionality reduction**
    - **Principal component analysis**

AI

- **Search**
    - **Informed**
    - **Uninformed**
    - **Adversarial**
- **Logic**
    - **Propositional**
    - **Predicate**
- **Reasoning Under Uncertainty**
    - **Conditional independence representation**
    - **Exact inference through variable elimination**
    - **Approximate inference through sampling**