W4995 Applied Machine Learning
Fall 2021

Course Recap

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Course Recap

- Lecture 1:
  - Motivation
  - Data Visualization
- Lecture 2:
  - Supervised Learning Framework
  - Data Preprocessing
- Lecture3:
  - Linear Models for Regression
  - Linear Models for Classification

Course Recap

- Lecture 4:
  - Decision Trees, Bagging & Boosting
  - Random Forests & Gradient Boosted Trees
- Lecture 5:
  - Model Evaluation
  - Calibration
  - Automatic Machine Learning
- Lecture 6:
  - Clustering
  - Dimensionality Reduction

Course Recap

- Lecture 7:
  - Learning with Imbalance Data
  - Learning with Sparse Data
- Lecture 8:
  - Neural Networks
  - Advanced Neural Networks
- Lecture 9:
  - Convolutional Neural Networks
  - Recurrent Neural Networks

Course Recap

- Lecture 10:
  - Working with text data
  - Topic Models
  - Word & Document Embeddings
- Lecture 11:
  - Recommender Systems
    - Classical Approaches
    - Modern Approaches

Resources

- Learning From Data (Book, Lectures)
- Probabilistic Machine Learning
- Pattern Recognition
- Deep Learning
- Elements of Statistical Learning

What have you not learnt in this course?

- Generative Models
- Time-series Models
- Self-supervised Learning
- Reinforcement Learning
- Causal Machine Learning
- ...

Where do you go from here?

- Kaggle competitions
- Gain depth
- Implement algorithms