

Introduction to Machine Learning

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1 Common sense

- Artificial Intelligence was proposed in 1950.
- Artificial Intelligence is target and machine learning (Deep learning is a kind of ML) is a approach.

2 Framework in ML

- Find a set of function (Models).
- Using training data to decide goodness of function of f .
- Pick the "Best" Function f^* (Gradient Descent)
- (Optional) Use f^* to inference on testing data.

3 Components of Machine Learning

3.1 Supervised Learning

- Regression
- Classification
- Structured Learning

3.2 Semi-supervised Learning

3.3 Transfer Learning

3.4 Unsupervised Learning

3.5 Reinforcement Learning