Assignment #4

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정영준

This class's topic is Introduction to Machine Learning. Professor Jongwuk Lee provided a lecture. Many people cannot clearly distinguish AI, deep learning, and data science. AI enables machines to think without human intervention. Machine Learning is a subset of AI that uses statistical learning algorithms. Deep Leaning is a subset of Machine Learning that learns the representation of input data without human feature engineering. Conventional method, Human put function and input, then Computer calculates output. Machine Leaning, Human put input and output, then Computer find function that can successfully predict output by given input. Supervised Learning data consist of input-output pairs. Let computers learn with many (input, output) pairs. Classification and Regression are Supervised Learning. Unsupervised Learning finds the hidden pattern in a dataset with no labels. Different interpretations can exist for no labeled data. Clustering, Dimensionality reduction, Density estimation and Association rule learning is Unsupervised Learning.

Reinforcement Learning is the process that given a sequence of states and a reward after completing the sequence, learn to predict the action for each state. Rewards are a finite of values or real-valued. OpenAI's "AlphaGo" has beat Lee Se dol one of the best Go player in the world. AlphaGo is trained by Reinforcement Learning. Many Atari games are also a good environments for training Reinforcement Leaning model.