COURSE DETAIL

MACHINE LEARNING
Country Taiwan
Host Institution National Taiwan University
Program(s) National Taiwan University
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Mechanical Engineering
UCEAP Course Number 108
UCEAP Course Suffix
UCEAP Official Title MACHINE LEARNING
UCEAP Transcript Title MACH LEARNING
UCEAP Quarter Units 4.50
UCEAP Semester Units 3.00

Course Description

The core spirit of machine learning is to learn the relevance of the data hidden in the data from the existing data through the mathematical model of the fusion hypothesis, so as to achieve the purposes of quantitative analysis, inference exploration, prediction, decision-making, etc. Machine learning can be roughly divided into two categories: machine learning hand-crafted features and deep learning. The main difference between the two is that the former is artificially designed and selected to describe the characteristics of the data, while the latter relies on deep learning theory to extract features.

This course mainly focuses on the introduction and exploration of the first type of machine learning (machine learning with hand-crafted features). The course uses actual medical imaging data to introduce typical methods of hand-crafting various features. And through actual clinical problems, implement hand-crafted features and understand their advantages and disadvantages. At the same time, in the part of machine learning algorithm, it will cover a variety of supervised, unsupervised and hybrid learning methods, such as: Linear Discrimination, decision Tree, Neural Network, Support Vector Machine, Bayesian Learning, Clustering, Reinforcement Learning and other methods.

Language(s) of Instruction
English

Host Institution Course Number
DBME5027

Host Institution Course Title
MACHINE LEARNING

Host Institution Campus

Host Institution Faculty
Engineering

Host Institution Degree
Host Institution Department

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