COURSE DETAIL

BASICS OF DEEP LEARNING
Country Korea, South
Host Institution Seoul National University
Program(s) Seoul National University
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Computer Science
UCEAP Course Number 140
UCEAP Course Suffix
UCEAP Official Title BASICS OF DEEP LEARNING
UCEAP Transcript Title BASICS OF DEEP LRNG
UCEAP Quarter Units 4.50
UCEAP Semester Units 3.00

Course Description

This course explores the underlying principles of several cutting-edge topics in machine learning and deep learning, including adversarial attacks, deep metric learning, generative models, information theory, and reinforcement learning.

In addition, the course examines the end-to-end construction of modern large language models and practices core concepts by implementing them. Students engage in coding assignments and team projects using GPU-enabled computer servers to test original ideas.

Topics include concepts and history of deep learning, backpropagation techniques such as stochastic gradient descent, initialization techniques, regularization techniques such as drop out, convolutional neural networks (CNN), CNN architectures, visualization of CNN, recurrent neural networks (RNN), RNN applications, and other applications including reinforced learning.

To emphasize practical skills to implement deep learning algorithms, programming-related lectures and lab sessions are included. The most important/popular language, Python, will be covered and a Python math library called Numpy is also taught with lab sessions. Advanced deep learning algorithms are implemented in Tensorflow library, which is introduced as well including relevant lab sessions

Language(s) of Instruction
English

Host Institution Course Number
M2177.004300

Host Institution Course Title
BASICS OF DEEP LEARNING

Host Institution Course Details

Host Institution Campus
Host Institution Faculty
Host Institution Degree
Host Institution Department
Course Last Reviewed 2024-2025

Print