

COURSE DETAIL

INTRODUCTION TO MATHEMATICS FOR DEEP LEARNING

Country

Korea, South

Host Institution

Yonsei University

Program(s)

Yonsei University

UCEAP Course Level

Lower Division

UCEAP Subject Area(s)

Computer Science

UCEAP Course Number

85

UCEAP Course Suffix**UCEAP Official Title**

INTRODUCTION TO MATHEMATICS FOR DEEP LEARNING

UCEAP Transcript Title

DEEP LEARNING MATH

UCEAP Quarter Units

4.50

UCEAP Semester Units

3.00

Course Description

This course surveys basic mathematical tools for deep learning research. The course includes 1) advanced probability theory, 2) information theory, and 3) optimization theory. Topics include introductions to learning theory, review on probability theory, multidimensional Gaussian variables, Gaussian processes, optimal linear estimation, parameter estimation, bias and variance of an estimator, introduction to information theory, entropy, mutual information, KL Divergence, applications of information theory, introduction to optimization, stochastic gradient descent and its convergence, and other optimization techniques and its convergence.

Language(s) of Instruction

English

Host Institution Course Number

AAI2230

Host Institution Course Title

INTRODUCTION TO MATHEMATICS FOR DEEPLARNING

Host Institution Course Details

Host Institution Campus

Host Institution Faculty

Host Institution Degree

Host Institution Department

Course Last Reviewed

2024-2025

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