COURSE DETAIL

INTRODUCTION TO DATA PROCESSING AND REPRESENTATION

Country

Israel

Host Institution

Israel Institute of Technology, Technion/Neubauer

Program(s)

Technion-Institute of Technology

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Computer Science

UCEAP Course Number

105

UCEAP Course Suffix

UCEAP Official Title

INTRODUCTION TO DATA PROCESSING AND REPRESENTATION

UCEAP Transcript Title

INTRO DATA PROCESS

UCEAP Quarter Units

4.50

UCEAP Semester Units

3.00

Course Description

This course focuses on the basic methods for processing and analyzing data with deterministic and probabilistic tools. It is a preliminary course for deep learning and convolutional neural networks. The course explains how to digitize signals and data in a computer, how to represent them in different bases, and how to use these representations efficiently for various signal processing tasks. Topics include signal quantization and sampling for bitallocation, system and data representations including but not limited to the Fourier representation, optimality of the Fourier representation, functional maps, convolutions, compression, dimensionality reduction, principal component analysis, restoration of blurred deterministic or randomly distributed data with or without random noise via filtering. Signals and systems are analyzed in the continuous and discrete settings.

Language(s) of Instruction

English

Host Institution Course Number

236201

Host Institution Course Title

INTRODUCTION TO DATA PROCESSING AND REPRESENTATION

Host Institution Course Details

https://www.graduate.technion.ac.il/Subjects.Eng/?Sub=236201

Host Institution Campus

Host Institution Faculty

Graduate School

Host Institution Degree

Joint

Host Institution Department

Computer Science

Course Last Reviewed

2021-2022

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