COURSE DETAIL

ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING: THEORY AND PRACTICE

Country
United Kingdom - England

Host Institution
Lady Margaret Hall, University of Oxford

Program(s)
Summer in Oxford, Lady Margaret Hall

UCEAP Course Level
Upper Division

UCEAP Subject Area(s)
Computer Science

UCEAP Course Number
112

UCEAP Course Suffix
S

UCEAP Official Title
ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING: THEORY AND PRACTICE

UCEAP Transcript Title
AI&MACHINE LEARNING

UCEAP Quarter Units
6.00

UCEAP Semester Units
4.00

Course Description

The course begins with an introduction to the basics of programming in Python, in particular understanding object-oriented programming and its importance to deep learning. The course quickly proceeds to an introduction to artificial intelligence, examining the fundamentals of supervised machine learning, including linear regression, logistic regression, neural networks, and gradient descent. In the second week, students explore image processing, investigating transformations, convolutional filters, and edge detection, before an introduction to convolutional neural networks and some prominent CNN architectures such as VGG and ResNet. In the final part of the course, students look at the core concepts of natural language processing, including sequence modeling, autoregressive models, and recurrent neural networks.

Language(s) of Instruction
English

Host Institution Course Number

Host Institution Course Title
ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING: THEORY AND PRACTICE

Host Institution Course Details
https://www.lmh.ox.ac.uk/artificial-intelligence-and-machine-learning-theory-an...

Host Institution Campus

Host Institution Faculty

Host Institution Degree

Host Institution Department

Course Last Reviewed
2026-2027

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