

COURSE DETAIL

DEEP REINFORCEMENT LEARNING

Country

Taiwan

Host Institution

National Taiwan University

Program(s)

National Taiwan University

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Computer Science

UCEAP Course Number

132

UCEAP Course Suffix**UCEAP Official Title**

DEEP REINFORCEMENT LEARNING

UCEAP Transcript Title

DEEP LEARNING

UCEAP Quarter Units

4.50

UCEAP Semester Units

3.00

Course Description

This course takes students on a journey through one of artificial intelligence's most dynamic fields. Deep reinforcement learning (DRL) has achieved remarkable breakthroughs, from mastering complex games to controlling robots. The course discovers how artificial intelligence (AI) agents learn to make decisions through interaction, beginning with core concepts in reinforcement learning and deep learning; then it explores how these powerful approaches combine to create sophisticated learning systems.

The course progresses naturally through key topics in decision making with Markov processes, modern deep learning techniques for AI, value-based methods that help agents evaluate their choices, policy optimization approaches for learning effective behaviors, and advanced strategies for stable and efficient learning. The course emphasizes practical understanding through hands-on examples. By the end of the course, students will understand how to build AI systems that can learn and adapt in complex environments.

Language(s) of Instruction

English

Host Institution Course Number

CSIE5439

Host Institution Course Title

DEEP REINFORCEMENT LEARNING

Host Institution Course Details

https://nol.ntu.edu.tw/nol/coursesearch/print_table.php?course_id=922%20U4960&c...

Host Institution Campus

Host Institution Faculty

College of Electrical Engineering and Computer Science

Host Institution Degree

Host Institution Department

Department of Computer Science and Information Engineering

Course Last Reviewed

2024-2025

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