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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