SEMINAR ANNOUNCEMENT

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING
COLLEGE OF DESIGN AND ENGINEERING
Website: https://cde.nus.edu.sg/ece

Area: Signal Analysis & Machine Intelligence

Host: Assistant Professor Wang Xinchao

Teaching Seminar

TOPIC	:	**A Beginner's Guide to Reinforcement Learning**
SPEAKER	:	**Dr Shu Tianmin** **Postdoctoral Associate, Department of Brain and Cognitive Sciences and the Computer Science and Artificial Intelligence Laboratory (CSAIL), Massachusetts Institute of Technology**
DATE	:	**Wednesday, 19 April 2023**
TIME	:	**10.00AM to 11.00AM**
VENUE	:	**Join Zoom Meeting** **https://nus-sg.zoom.us/j/4156763801?pwd=NUwzUWhwdlZlcGt3cmhyTzFld1V0QT09** **Meeting ID: 415 676 3801** **Passcode: 662108**

ABSTRACT

In recent years, reinforcement learning (RL), particularly deep reinforcement learning, has achieved tremendous success in many domains, such as building AI systems that can play games against humans at the professional level, training robots to perform difficult physical tasks, and discovering new drugs. In this lecture, I will introduce the fundamentals of reinforcement learning, including Markov decision processes (MDPs), policies, value functions, and Bellman equations. I will then demonstrate how to train an RL agent using one of the most common RL algorithms, Q-learning. Finally, I will briefly discuss how we can combine deep neural networks with RL to train agents to perform complex tasks from raw visual inputs.

BIOGRAPHY

Dr. Tianmin Shu is a postdoctoral associate in the Department of Brain and Cognitive Sciences and the Computer Science and Artificial Intelligence Laboratory (CSAIL) at the Massachusetts Institute of Technology, co-advised by Josh Tenenbaum and Antonio Torralba. His research goal is to advance human-centered AI by engineering human-level machine social intelligence to build socially intelligent systems that can understand, reason about, and interact with humans in real-world settings. His work received the 2017 Cognitive Science Society Computational Modeling Prize in Perception/Action and several best paper awards at NeurIPS workshops and an IROS workshop. His research has also been covered by multiple media outlets, such as New Scientist, Science News, and VentureBeat. He received his PhD degree from the University of California, Los Angeles, in 2019.