Title: Deep Reinforcement Learning for Virtual Games and Real Robots

Abstract:
Deep reinforcement learning (DRL) has laid several milestones in artificial intelligence (AI), as the DQN algorithm to conquer the Atari video games, AlphaGo for the most difficult board game Go, AlphaZero for more general board games, AlhpaStar for real-time strategy game Starcraft II, Muzero as a general game AI for both board games and video games, and Gato as a generalist agent for multi-modal multi-task multi-embody decision making problems. Recent years witnessed the rapid progress of DRL in different kinds of domains to become a very hot topic of research and applications. This talk will introduce the major achievements and recent progresses of DRL algorithms, and present some efforts on decision making for virtual games and real robots from the speaker's group, and pack up some possible future research trends.

Short Bio
Dongbin Zhao is a professor with the Institute of Automation, Chinese Academy of Sciences, and the University of Chinese Academy of Sciences, China. Dr. Zhao serves as the Associate Editor of IEEE Computational Intelligence Magazine, IEEE Transactions on Cybernetics, IEEE Transactions on Artificial Intelligence, etc. He is involved in organizing many international conferences, including General Chair of IEEE Conference on Games 2022. He has published 6 books, and over 300 international journal and conference papers, including the 2022 Best Paper Award of IEEE TASE, 2022 Outstanding Paper Award of IEEE TETCI, and 2020 Outstanding Paper Reward of IEEE TCDS. His group won over 10 first prizes in AI competitions, including 3 championships of 2020 RoboMaster AI Challenge, and the Championship for Fighting AI Competition of 2020 IEEE Conference on Games. His current research interests lie in deep reinforcement learning, computational intelligence, smart driving, game artificial intelligence, robotics, etc. He is an IEEE/CAA/AAIA Fellow.