Distinguished Lecturer Visit by Prof. Daoyi Dong at IEEE SMCS Shanghai Chapter, 4th, November, 2024

Prof. Daoyi Dong visited Fudan University, Shanghai, on November 4th, 2024, where he delivered an IEEE Distinguished Lecture titled "Improved reinforcement learning with applications in robotics, games and quantum engineering" to the SMCS Shanghai Chapter in Shanghai, China, organized by Prof. Xing-Ming Zhao. The lecture attracted many attendees, including students, researchers, and professionals from the fields of artificial intelligence, robotics, and control engineering.

Professor Dong, a renowned expert in the field of artificial intelligence and control systems, explored the cutting-edge developments in reinforcement learning (RL). He focused on how autonomous agents can learn to approximate optimal behavioral strategies through interactions with their environments. His discussion covered several improved reinforcement learning algorithms, such as incremental reinforcement learning, quantum reinforcement learning, and quantum-inspired deep reinforcement learning, highlighting their theoretical foundations and practical implications.

The lecture also showcased various applications of these advanced algorithms in robotics, gaming, and quantum engineering, demonstrating their transformative potential across different industries. Professor Dong provided examples where these algorithms have significantly improved the efficiency and effectiveness of robotic systems, enhanced decision-making processes in strategic games, and contributed to groundbreaking advances in quantum computing.

One of the highlights of the lecture was Professor Dong’s detailed explanation of quantum reinforcement learning, which integrates principles of quantum computing with traditional reinforcement learning techniques. This approach has opened new avenues for solving complex problems that are otherwise intractable with classical algorithms.

The success of the event was evident in the engaging discussions that followed the lecture, with participants keen to explore further the implications of these advancements in their respective fields. The SMCS Shanghai Chapter, under the leadership of Professor Zhao, expressed appreciation for Professor Dong's insights and contributions to the field of systems engineering and cybernetics. Following the lecture and discussion, Professor Dong also had several meetings to interact with some SMCS members in Shanghai Chapter on 5-6 November 2024.

This event not only highlighted the ongoing research and development in reinforcement learning but also reinforced the SMCS Shanghai Chapter’s commitment to promoting scientific exchange and innovation within the community. The chapter looks forward to hosting more events that bring together leading minds in technology and science to foster collaboration and learning.

Figure 1: Prof. Daoyi Dong presents the IEEE SMS Distinguished Lecture on 4th, November, 2024, at Fudan University, China.

Figure 2: Attendees at Fudan University attending the IEEE SMC Society Distinguished Lecture on site.