



北京理工大学

Beijing Institute of Technology

“21世纪学科前沿”系列学术报告

“深度强化学习：理论与应用”系列报告之六

报告题目: Spatial-Temporal Game dynamics and Multi-Agent Deep Reinforcement Learning

报告人: 吴焦苏 (中国科学院人工智能联盟标准组成员)

报告摘要: Yann LeCun suggested that we should search for the “Aerodynamics” of artificial intelligence and establish a world model. We answer this question from John von Neumann’s Prospective. We propose the Strategic Correlativity Principle(SCP), a kind of second-order structure in Hamiltonian and potential Gamedynamics as a starting point and apply it to solve the challenge in No-Regret and the Exploration-Exploitation problem in Multi-Agent Deep Reinforcement Learning. We also propose some open problems, i.e., three laws of gamedynamics: Population Conservation Law; Information Conservation Law and Coordination Conservation Law.

报告人简介: John J.S. Wu is a member of Ethical Standards Group of Artificial Intelligence Alliance of Chinese Academy of Sciences (AIACAS). His current research interests focus on an innovative area of mathematical foundation of artificial intelligence---Gamedynamics, which brings together mechanism design, deep reinforcement learning, neuroscience, intelligent robotics, etc. Inspired by John von Neumann and Robert Aumann, he has been developing a general theoretical framework of the Strategic Correlativity Principle(SCP) and Graceful AI Theory over recent sixteen years. In addition to more than 30 articles and working papers, he is co-author of four books. His papers were cited by the scientists from Google, Stanford University, Cornell University, Stockholm University, etc.

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