CURRICUMUL VITAE

Xinwei Gao

Personal Information:

Date of Birth: 25-06-1999
Nationality: People's Republic of China
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Education:

Aug 2021~July 2022: Master of Engineering in Department of Mechanical Engineering, National University of Singapore

Sept 2017~Jun 2021: Bachelor of Engineering in School of Mechanical Engineering, Nanjing University of Science and Technology

Graduate Studies

Aug 2021~Oct 2022: Mechanical Engineering Project "Individual Voting for RL and Search-based Algorithm Combination in Multi-agent Pathfinding."

We propose an Individual Voting mechanism to optimize the algorithm's performance in dead/livelock situations by learning to combine a decentralized RL algorithm and a centralized search-based algorithm. Our method significantly improves the large-scale Multi-agent Pathfinding problem's success rate and has a shorter path length in terms of the efficiency of path planning.

Undergraduate Studies

Sept 2020~May 2021: Final year project "The Application of Reinforcement Learning in Continuous Control Problem."

We apply a reinforcement learning algorithm as an intelligent decision algorithm to realize the manipulator's smart grasping process. Cartesian coordinate variables output is generated by RGB image information and controls the action of the manipulator in continuous space. Finally, we achieve autonomous grasping of workpieces having various shapes without manually altering the control algorithm.

May 2019~Oct 2020: Academic Research Training "Design of Dynamic Object Recognition Based on Deep Learning."

This project aims to realize the classification and dynamic tracking of workpieces using portable computing equipment, providing spatial information for intelligent manufacturing in the production line process.

Work Experience

April 2022~May 2022: Student Researcher of MARMoT lab in NUS.

Research Interests

Reinforcement Learning, Multi-agent Cooperation, Robot Control, Self-driving Technology, Path Finding, Communication Learning.

Programming and Modeling Skills

High Level Languages	C/C++, Python
Scientific Packages	MATLAB, TensorFlow, PyTorch
OS	Windows, Linux, ROS
CAD	AutoCAD, SolidWorks
Game Development	ML-Agents (Unity)

Languages

Chinese	Mother tongues
English	Good level reading, writing, and speaking

References

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