

QIUSHI (MAX) LIN

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<https://qiushi-lin.github.io>

RESEARCH INTERESTS

Developing theoretically principled machine learning algorithms, with a focus on reinforcement learning

EDUCATION

Simon Fraser University (SFU), Burnaby, Canada

2021 - Now

M.Sc. in Computing Science (Expected Graduation: December 2023)

GPA: 4.06/4.33

- Advisor: Hang Ma
- Courses: Theoretical Foundations of Reinforcement Learning [Ongoing], Optimization for Machine Learning [A], Statistical Machine Learning [A], Graph Representation Learning [A], (Multi-Agent) Intelligent Systems [A+], Data Mining [A]
- Thesis: Learning Cooperation for Partially Observable Multi-Agent Path Finding [pdf]

Southern University of Science and Technology (SUSTech), Shenzhen, China

2016 - 2020

B.Eng. in Computer Science and Technology

GPA: 3.75/4.00

- Graduation with Departmental Highest Honors

RESEARCH EXPERIENCES

Research Assistant, AIRob Lab (SFU Robotics Research Group)

2021- 2023

- supervised by Prof. Hang Ma
- focusing on reinforcement learning and multi-agent systems

PUBLICATIONS, PREPRINTS, AND MANUSCRIPTS

2. Mean Field Control with Envelope Q -learning for Moving Agents in Formation

Qiushi Lin and Hang Ma

Preprint (In Submission) [pdf] [code]

Short Abstract: We proposed an adaptable multi-objective multi-agent reinforcement learning algorithm that combines mean field control and envelop Q -learning for moving agents in formation, and provided theoretical analysis and empirical evaluation.

1. SACHA: Soft Actor-Critic with Heuristic-Based Attention for Partially Observable Multi-Agent Path Finding

Qiushi Lin and Hang Ma

In IEEE Robotics and Automation Letters (RA-L) 2023 [pdf] [code]

Short Abstract: We designed a novel multi-agent actor-critic reinforcement framework for partially observable multi-agent path finding so that the learned model to generalize among multiple instances.

AWARDS AND HONOS

- Westak International Sales, Inc. Graduate Scholarship 2023
- Deparmental Highest Honors of Graduation at SUSTech 2020

TEACHING EXPERIENCES

Teaching Assistant, SFU

- CMPT 310: Introduction to Artificial Intelligence

- CMPT 417/827: (Multi-Agent) Intelligent Systems
- MACM 101: Discrete Mathematics

TECHNICAL SKILLS

Programming Languages: Python, C/C++, Matlab, SQL

Frameworks and Tools: Pytorch, Tensorflow, Linux, GitHub, LaTeX