QIUSHI (MAX) LIN

qiushi_lin@sfu.ca

https://qiushi-lin.github.io

RESEARCH INTERESTS

Theoretical Foundations of Reinforcement/Machine Learning, Applications of (Multi-Agent) Reinforcement Learning, Multi-Agent Systems

EDUCATION

Simon Fraser University, 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), Intelligent Systems (A+), Data Mining (A)
– Thesis: Learning Cooperation for Partially Observable Multi-Agent Path Finding [pdf]

Southern University of Science and Technology, Shenzhen, China   *2016 - 2020*
B.Eng. in Computer Science and Technology   GPA: 3.75/4.00

– Graduation with Departmental Highest Honors

RESEARCH EXPERIENCES AND PROJECTS

Research Assistant, AIRob Lab (SFU Robotics Research Group)   *2021- 2023*

– **Path Planning in Multi-Agent Systems** Implemented search-based algorithms for multi-agent path finding and test them over numerous benchmarks [code]
– **Partially Observale Multi-Agent Path Finding** Designed a generalizable deep multi-agent reinforcement learning algorithm for partially observable multi-agent path finding, and compared it with the state-of-the-art baselines in various environments [code]
– **Moving Decentralized Agents in Formation** 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 [code]

PUBLICATIONS AND PREPRINTS

2. Qiushi Lin and Hang Ma
   Mean Field Control with Envelope Q-learning for Moving Agents in Formation
   Preprint [pdf] [code]

1. Qiushi Lin and Hang Ma
   SACHA: Soft Actor-Critic with Heuristic-Based Attention for Partially Observable Multi-Agent Path Finding
   In IEEE Robotics and Automation Letters (RA-L) 2023 [pdf] [code]

SKILLS

Programming Languages: Python, C/C++, Matlab, SQL
Frameworks and Tools: Pytorch, Tensorflow, Linux, GitHub, LaTeX