# QIUSHI (MAX) LIN

qiushi_lin@sfu.ca
https://qiushi-lin.github.io

## RESEARCH INTERESTS

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

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

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]
   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

## 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