Changling Li

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And now I see with eye serene, the very pulse of the machine.

EDUCATION BACKGROUND

ETH Zurich, Switzerland 09/2022 – Present
Master of Science in Computer Science, MSc
- Grade: **5.35**/6
- Major: Machine Intelligence; Minor: Theoretical Computer science

Colby College, United States 09/2018 – 05/2022
Bachelor of Arts, Physics and Computer Science with Honors
- GPA: **3.99**/4
- Awards and Honors : Distinction in both majors; Magna Cum Laude; Phi Beta Kappa; Sigma Pi Sigma; UWC Davis Scholar; Dean's List F'18, S'19, F'19, F'21 (2020 and S'21 - cancelled due to COVID-19)

Li Po Chun United World College, Hong Kong 09/2016 – 06/2018
International Baccalaureate Bilingual Diploma : 41/45

PUBLICATION

1. **Changling Li**, Ying Li, "Scaling up Energy-Aware Multi-Agent Reinforcement Learning for Mission-Oriented Drone Networks with Individual Reward." IEEE Internet of Things Journal (2024).
2. **Changling Li**, Zhang-Wei Hong, Pulkit Agrawal, Divyansh Garg, and Joni Pajarinen. "ROER: Regularized Optimal Experience Replay." Reinforcement Learning Journal, vol. 4, 2024, pp. 1598–1618.
3. Ying Li, **Changling Li**, Jiyao Chen, and Christine Roinou. "Energy-aware multi-agent reinforcement learning for collaborative execution in mission-oriented drone networks." In 2022 International Conference on Computer Communications and Networks (ICCCN), pp. 1–9. IEEE, 2022.

RESEARCH EXPERIENCE

Robot Morphology Design Automation 08/2024 – Present
Supervisor: Zhang-Wei Hong & Prof. Joni Pajarinen, Massachusetts Institute of Technology, Aalto University
- Implemented the closed-loop generation and evaluation workflow.

Regularized Optimal Experience Replay for Deep Reinforcement Learning 08/2023 – 04/2024
Supervisor: Zhang-Wei Hong & Prof. Pulkit Agrawal , Massachusetts Institute of Technology, Aalto University
- Derived the theoretical formulation involving occupancy optimization and Lagrangian duality.
- Implemented JAX-based Soft Actor-Critic RL with proposed experience replay formulation.
- Ran Large scale evaluation using MuJoCo and DM Control.
- Both oral and poster presentations at the Reinforcement Learning Conference in August 2024.

Towards a Ethical Framework to Resolve Conflicts in Multi-Agent Systems 02/2022 – 08/2022
Supervisor: Prof. Stacy A. Doore, Colby College
- Surveyed related literature in both machine learning and ethical theories.
- Proposed a framework for conflict resolution in multi-agent systems using ethical theories.
- Created a simulation case of a smart city for evaluating the framework.

Multi-Agent reinforcement learning for mission-oriented Drone Networks 01/2021 – 02/2022
Supervisor: Prof. Ying Li, Colby College
- Created an OpenAI gym based drone networks simulation environment.
- Implemented Pytorch-based DQN MARL for credit assignment exploration.
- Oral presentation at International Conference on Computer Communications and Networks in July 2022.
- Journal paper was accepted by IEEE Internet of Things Journal in 2024.

TEACHING EXPERIENCE

Department of Computer Science, Colby College 09/2019 – 05/2022
Teaching Assistant
- Courses include: CS 353 Interactive System; CS 251 Data Analysis and Visualization; CS 231 Data Structure and Algorithm; CS 152 Computational Thinking: Science; CS 151 Computational Thinking: Visual Media.

Department of Physics and Astronomy, Colby College 09/2019 – 05/2021
Teaching Assistant
- Courses include: PH 241 Modern Physics I; PH 242 Modern Physics II.

EXTRACURRICULAR SERVICE

- 3D Printer Instructor at WatervilleCreates! 09/2021 – 05/2022
- Co-leader and Logistician for The Bridge (LGBTQIA+) Club at Colby College 02/2019 – 09/2021
- Co-leader and Data Analyst for Coral Monitoring at Li Po Chun UWC 09/2016 – 06/2018