

Changling Li

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

EDUCATION BACKGROUND

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| ETH Zurich, Switzerland <i>Master of Science in Computer Science, MSc</i> <ul style="list-style-type: none">Grade: 5.35/6Major: Machine Intelligence; Minor: Theoretical Computer science | 09/2022 – Present |
| Colby College, United States <i>Bachelor of Arts, Physics and Computer Science with Honors</i> <ul style="list-style-type: none">GPA: 3.99/4Awards 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) | 09/2018 – 05/2022 |
| Li Po Chun United World College, Hong Kong <i>International Baccalaureate Bilingual Diploma : 41/45</i> | 09/2016 – 06/2018 |

PUBLICATIONS

- 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).
- 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.
- 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 EXPERIENCES

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| Robot Morphology Design Automation <i>Supervisor: Zhang-Wei Hong & Prof. Joni Pajarinen, Massachusetts Institute of Technology, Aalto University</i> <ul style="list-style-type: none">Implemented the closed-loop generation and evaluation workflow. | 08/2024 – Present |
| Regularized Optimal Experience Replay for Deep Reinforcement Learning <i>Supervisor: Zhang-Wei Hong & Prof. Pulkit Agrawal, Massachusetts Institute of Technology, Aalto University</i> <ul style="list-style-type: none">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. | 08/2023 – 04/2024 |
| Towards a Ethical Framework to Resolve Conflicts in Multi-Agent Systems <i>Supervisor: Prof. Stacy A. Doore, Colby College</i> <ul style="list-style-type: none">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. | 02/2022 – 08/2022 |
| Multi-Agent reinforcement learning for mission-oriented Drone Networks <i>Supervisor: Prof. Ying Li, Colby College</i> <ul style="list-style-type: none">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. | 01/2021 – 02/2022 |

TEACHING EXPERIENCES

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| Department of Computer Science, Colby College <i>Teaching Assistant</i> <ul style="list-style-type: none">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. | 09/2019 – 05/2022 |
| Department of Physics and Astronomy, Colby College <i>Teaching Assistant</i> <ul style="list-style-type: none">Courses include: PH 241 Modern Physics I; PH 242 Modern Physics II. | 09/2019 – 05/2021 |

EXTRACURRICULAR SERVICES

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| 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 |