Qingfeng Lan

Curriculum Vitae

qlan3@ualberta.ca
Personal Website
Google Scholar
Linkedin
Github

Research Interest Reinforcement Learning, Continual Learning, Embodied AI, LLM with human feedback, Meta-Learning, Understanding Neural Networks.

Education

20.09 - Present **Doctor of Philosophy in Computing Science**, *University of Alberta*, Canada.
Supervisor A. Rupam Mahmood

18.09 - 20.08 **Master of Science in Computing Science**, *University of Alberta*, Canada.
Supervisor Alona Fyshe

14.09 - 18.07 **Bachelor of Engineering in Computer Science and Technology**, *University of Chinese Academy of Sciences*, China.
Advisor Yanyan Lan (thesis advisor), Guojie Li (tutor)

17.10 - 18.03 **Visiting Non-Matriculated Programme**, *University of Oxford*, England.
Tutor Leslie Ann Goldberg

Employment

24.06 - 24.10 **Research Intern**, *Meta Reality Lab*, California, United States.
Collaborator Rohan Chitnis, Alborz Geramifard
Project Improving Next-generation Wearables through Reinforcement Learning. [Link]

22.07 - 23.01 **Research Intern**, *Sea AI Lab*, Singapore.
Collaborator Zhongwen Xu, Shuicheng Yan
Project Learning to Optimize for Reinforcement Learning. [Link]

22.01 - 22.06 **Research Intern**, *Huawei Noah's Ark Lab*, Edmonton, Canada.
Collaborator Yangchen Pan, Jun Luo
Project Memory-efficient Reinforcement Learning with Value-based Knowledge Consolidation. [Link]

17.07 - 18.04 **Research Assistant**, *Key Laboratory of Network Data Science and Technology, Chinese Academy of Sciences*, Beijing, China.
Collaborator Yixing Fan, Yanyan Lan, Jiafeng Guo
Project A Deep Top-K Relevance Matching Model for Ad-hoc Retrieval. [Link]

Publications

*: Equal contribution

Conference and Journal Articles

Nature-2024 **Loss of Plasticity in Deep Continual Learning**.
Shibhansh Dohare, J. Fernando Hernandez-Garcia, **Qingfeng Lan**, Parash Rahman, A. Rupam Mahmood, Richard S. Sutton. *Nature, 2024.* **Article. [Link]**

RLC-2024 **Learning to Optimize for Reinforcement Learning**.
Qingfeng Lan, A. Rupam Mahmood, Shuicheng Yan, Zhongwen Xu. *Reinforcement Learning Conference, 2024.* **Oral. [Link]**

RLC-2024 **More Efficient Randomized Exploration for Reinforcement Learning via Approximate Sampling**.
Haque Ishfaq, Yixin Tan, Yu Yang, **Qingfeng Lan**, Jianfeng Lu, A. Rupam Mahmood, Doina Precup, Pan Xu. *Reinforcement Learning Conference, 2024.* **Oral. [Link]**

RLC-2024 **Weight Clipping for Deep Continual and Reinforcement Learning**.
Mohamed Elsayed, **Qingfeng Lan**, Clare Lyle, A. Rupam Mahmood. *Reinforcement Learning Conference, 2024.* **Oral. [Link]**

ICLR-2024 **Provable and Practical: Efficient Exploration in Reinforcement Learning via Langevin Monte Carlo**.
Haque Ishfaq*, **Qingfeng Lan***, Pan Xu, A. Rupam Mahmood, Doina Precup, Anima Anandkumar, Kamyar Azizzadenesheli. *International Conference on Learning Representations, 2024.* **Poster. [Link]**

TMLR-2023 **Memory-efficient Reinforcement Learning with Value-based Knowledge Consolidation**.
Qingfeng Lan, Yangchen Pan, Jun Luo, A. Rupam Mahmood. *Transactions on Machine Learning Research, 2023.* **CoLLAs certification. [Link]**

AISTATS-2022 **Model-free Policy Learning with Reward Gradients**.
Qingfeng Lan, Samuele Tosatto, Homayoon Farrahi, A. Rupam Mahmood. *International Conference on Artificial Intelligence and Statistics, 2022.* **Poster. [Link]**

ICLR-2020 **Maxmin Q-learning: Controlling the Estimation Bias of Q-learning**.
Qingfeng Lan, Yangchen Pan, Alona Fyshe, Martha White. *International Conference on Learning Representations, 2020.* **Poster. [Link]**

CCIR-2018 **A Deep Top-K Relevance Matching Model for Ad-hoc Retrieval**.
Zhou Yang, **Qingfeng Lan**, Jiafeng Guo, Yixing Fan, Xiaofei Zhu, Yanyan Lan and Yue Wang, Xueqi Cheng. *China Conference on Information Retrieval, 2018.* **Best Paper Award Candidate. [Link]**

Workshop and Non-Refereed Articles

ICML-2023 **Elephant Neural Networks: Born to Be a Continual Learner**.
Qingfeng Lan, A. Rupam Mahmood. *ICML Workshop on High-dimensional Learning Dynamics, 2023.* **Poster. [Link]**

EWRL-2023 **Overcoming Policy Collapse in Deep Reinforcement Learning**.
Shibhansh Dohare, **Qingfeng Lan**, A. Rupam Mahmood. *European Workshop on Reinforcement Learning, 2023.* **Poster. [Link]**

arXiv-2021 **Variational Quantum Soft Actor-Critic**.
Qingfeng Lan. *Quantum Computing Course Project, 2021.* **[Link]**

Master Thesis **Predictive Representation Learning for Language Modeling**.
Qingfeng Lan. *2020.* **[Link]**

NeurIPS-2019 **Reducing Selection Bias in Counterfactual Reasoning for Individual Treatment Effects Estimation**.
Zichen Zhang, **Qingfeng Lan**, Lei Ding, Yue Wang, Negar Hassanpour, Russell Greiner. *NeurIPS Workshop on Causal Machine Learning, 2019.* **Poster Spotlight.** **[Link]**

Academic Services

Reviewer JMLR 2020, NeurIPS 2022-2024, ICLR 2023-2024, AISTATS 2023, CoLLAs 2023-2024, ICML 2024, RLC 2024, RLC 2024 Workshop Deployable RL.

Open-Source Code

Jaxplorer.
A Jax reinforcement learning framework for exploring new ideas.

Optim4RL.
A Jax framework of learning to optimize for reinforcement learning.

Explorer.
A PyTorch reinforcement learning framework for exploring new ideas.

Gym Games.
A collection of Gymnasium compatible games for reinforcement learning.

Quantum Explorer.
A quantum reinforcement learning framework based on PyTorch and PennyLane.

Teaching Experience

Fall 2023 **Teaching Assistant**, *University of Alberta*, Edmonton, Canada.
CMPUT 340: Introduction to Numerical Methods

Winter 2019 **Teaching Assistant**, *University of Alberta*, Edmonton, Canada.
CMPUT 175: Introduction to the Foundations of Computation II

Fall 2018 **Teaching Assistant**, *University of Alberta*, Edmonton, Canada.
CMPUT 174: Introduction to the Foundations of Computation I

Awards & Honors

2023 **Alberta Innovates Graduate Student Scholarship**, CAD 31,000.
University of Alberta

Computer skills

Language Python, Matlab, C

Framework Jax, PyTorch, Tensorflow