Richie Lo Yat Long

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EDUCATION

University of Oxford

❖ Master of Science (Computer Science) – **(Distinction, Class of 2021)**

❖ Relevant coursework: Bayesian Statistical Probabilistic Programming, Quantum Processes and Computation, Law and Computer Science, Advanced Topics in Machine Learning, Computational Game Theory

❖ Thesis: Cheap Talk Discovery and Utilization in Multiagent Reinforcement Learning, supervised by Professor Shimon Whiteson and Professor Jakob Foerster – **(The Hoare Prize for the best thesis, 2021)**

University of Hong Kong

❖ Bachelor of Engineering (Computer Science) **(First Class Honours, GPA: 3.71, Class of 2020)**

❖ Bachelor of Business Administration (Major in Information Systems and Computer Science) **(First Class Honours, GPA: 3.57, Class of 2018)**

❖ Relevant coursework: Introduction to Data Structures and algorithms, Computer Organization, Principles of Operating Systems, Software Engineering, Advanced Database Management, Design and Analysis of Algorithms, Machine Learning

❖ Thesis: Bidirectional Rollouts in Model-Based Reinforcement Learning, supervised by Professor Jia Pan

University of Illinois at Urbana-Champaign – GPA: 3.64

❖ Exchange student in the Department of Computer Science (2017 Spring)

❖ Relevant coursework: Artificial Intelligence, Communication Networks, Introduction to Data Mining, Brain, Behavior & Info Processing, Applied Linear Algebra

ACADEMIC HONOURS

The Hoare Prize for the best thesis in the MSc in Computer Science (2021)
Dean's Honours List (2016-2017, 2017-2018, 2019-2020)
Certificate of Merit, FYP/PG Paper Competition, IEEE (HK) Computational Intelligence Chapter (2017-2018)
Hong Kong Innovation and Technology Scholarship Award Scheme (2018)
Philip K H Wong Foundation Scholarships for Student Enrichment (2016)
HKU Foundation Scholarships for Outstanding Students (2013)

TECHNICAL SKILLS

Programming: Python, C#, C++, C, Haskell, HTML, CSS, JavaScript, PHP, SQL, Java
Machine Learning Topics: Deep Learning, Reinforcement Learning. Multi-Agent Reinforcement Learning, Natural Language Processing, Large Language Models
Machine Learning Tools: PyTorch, Tensorflow, Keras, Sci-kit Learn
Cloud Computing: AWS, Azure

PUBLICATIONS

Mohit Shridhar*, **Yat Long Lo***, Stephen James. **Generative Image as Action Models**. Conference on Robot Learning. 2024. https://genima-robot.github.io/.

Yat Long Lo, Biswa Sengupta, Jakob Foerster, Michael Noukhovitch. **Learning Multi-Agent Communication with Contrastive Learning.** In Proceedings of the 12th International Conference on Learning Representations (ICLR). 2024

Yat Long Lo, Christian Schroeder De Witt, Samuel Sokota, Jakob Foerster, Shimon Whiteson. **Cheap Talk Discovery and Utilization in Multi-Agent Reinforcement Learning**. In Proceedings of the 11th International Conference on Learning Representations (ICLR). 2023

Jobs Heitzig, Jörg Oechssler, Christoph Pröschel, Niranjana Ragavan, **Yat Long Lo**. Improving International Climate Policy via Mutually Conditional Binding Commitments. AI For Global Climate Cooperation Competition. 2023

Yat Long Lo, Biswa Sengupta. **Learning to Ground Decentralized Multi-Agent Communication with Contrastive Learning**. ICLR Workshop on Emergent Communication. 2022 (**Runner-up Best Paper**)

Yat Long Lo, Jia Pan and Albert Y.S. Lam. **Knowing When To Look Back: Bidirectional Rollouts in Dyna-style Planning**. ICAPS Workshop on Bridging the Gap Between AI Planning and Reinforcement Learning. 2020

Sina Ghiassian, Banafsheh Rafiee, **Yat Long Lo** and Adam White. **Improving Performance in Reinforcement Learning by Breaking Generalization in Neural Networks**. In Proceedings of the 19th International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS). 2020

Yat Long Lo and Sina Ghiassian. **Overcoming Catastrophic Interference in Online Reinforcement Learning with Dynamic Self-Organizing Maps**. NeurIPS Workshop on Biological and Artificial Reinforcement Learning. 2019

Zhiyu Liu, Wenhao Jiang, Kit Hang Lee, **Yat Long Lo**, Yui Lun Ng, Qi Dou, Varut Vardhanabhuti and Ka Wai Kwok. **A Two-Stage Approach for Automated Prostate Lesion Detection and Classification with Mask R-CNN and Weakly Supervised Deep Neural Network**. MICCAI Workshop on Artificial Intelligence in Radiation Therapy. 2019.

Yat Long Lo, Chung Yu Woo and Ka Lok Ng. **The Necessary Roadblock to Artificial General Intelligence: Corrigibility**. AI Matters. 2019. (**Winner of 2018 ACM SIGAI Student Essay Contest on Artificial Intelligence Technologies**)

Subham De, Shreyans Chowdhary, Aniket Shirke, **Yat Long Lo**, Robin Kravets, and Hari Sundaram. **Finding by counting: a probabilistic packet count model for indoor localization in BLE environments**. In Proceedings of the 11th Workshop on Wireless Network Testbeds, Experimental evaluation & Characterization, pp. 67-74. ACM, 2017.

Larry Di Girolamo, Shashank Bansal, M. Butler, Dongwei Fu, Yizhao Gao, H. Joe Lee, Yan Liu, **Yat Long Lo**, David Raila, Kandace Turner et al. **The Terra Data Fusion Project: An Update**. In AGU Fall Meeting Abstracts. 2017.

INDUSTRY EXPERIENCE

Applied Scientist II, GenAI/AGI, Amazon
November 2024 – Current

❖ *Conduct LLM research with a focus on post-training (keywords: SFT, RLHF, Tool Use, RL)*
❖ *Develop inference latency optimization methods (e.g., model-based routing) that are deployed to Alexa+*

Co-founder, Rooka
February 2023 − December 2024
- ❖ Co-founded and led the technical development at Rooka, a start-up offering [a legal drafting assistant](#) powered by large language models.
- ❖ Led the research effort in applying natural language processing techniques and large language models for low-resource languages like Czech, Polish, and Slovak. The technology used includes LangChain and LlamaIndex

Senior Research Engineer, Dyson Robot Learning Lab, Dyson
February 2023 – July 2024
- ❖ Led and contributed to robot learning research projects
- ❖ Developed sample-efficient imitation learning and reinforcement learning algorithms for robot manipulation
- ❖ Contributed and maintained [robot learning training infrastructure and codebases](#)
- ❖ Sample project: [diffusion-based imitation learning algorithm](#) for semantic generalization in robotic manipulation
- ❖ Supervised by Dr. Stephen James

AI Researcher – DRL for Power Markets, Shell Research
July 2022 – February 2023
- ❖ Recipient of Special Recognition Award in Artificial Intelligence
- ❖ Provided subject-matter expertise and technical leadership across the team's AI portfolio projects
- ❖ Worked closely with traders to develop time-series prediction models
- ❖ Developed reinforcement learning models for energy trading-related applications
- ❖ Sample projects: AI for battery trading, solar fuel cell control, wind farm control

Machine Learning Scientist Intern, Chief Technology Office-Solution Incubation Team, Zebra Technologies
September 2021 – June 2022
- ❖ Developed machine learning tools for warehouse automation (e.g., task scheduling)
- ❖ Conducted research on large-scale multi-agent systems in warehouses
- ❖ Supervised by Dr. Biswa Sengupta

Junior Developer – Machine Learning (Micro-Internship), EcoSync Oxford
December 2020
- ❖ Optimized the company's deep reinforcement learning codebase – 400x Speedup
- ❖ Integrated a prediction model into the reinforcement learning codebase as a simulator

Research Intern, Fano Labs
June-August 2018
- ❖ Conducted research on natural language processing
- ❖ Research Focus: Universal sentence representation for low-resource languages (e.g. Cantonese) with deep neural networks
- ❖ Side focus: Developed deep learning models for Chinese character recognition in videos
- ❖ Supervised by Professor Albert Y.S. Lam

Data Science intern, Inference Analytics
July-September 2017
- ❖ Inference Analytics is a data analytics startup company based in Chicago
- ❖ Worked on the development of a recommendation engine with real customer data with tools including PySpark and Keras
- ❖ Made use of deep neural networks for next-basket recommendation

Intern, Developer Experience Group, Microsoft
June-August 2016
- ❖ Built demos making use of Microsoft's Technology, E.g. IOT weather station demo, Universal Windows Applications, Smart Mirror Application
- ❖ Technologies/Techniques used: C#, SQL, SQL Server, Microsoft Azure, JSON over HTTP, Server/Client Architecture

Developer Intern, QWeUs Ltd
January-May 2016
- ❖ QWeUs is a startup company in mobile gaming stationed at Cyberport
- ❖ Developed mobile game applications with C# on Unity Engine

Internship Trainee (Mobile Application Development), PokeGuide Ltd
July-December 2015
- ❖ Developed features including geolocation, navigation and shop browsing system on the Android mobile application
- ❖ Created the company's website
- ❖ Conducted business negotiations with shops in Hong Kong and strategic planning of application launch

RESEARCH EXPERIENCE

Research Visitor, Reinforcement Learning and Artificial Intelligence Laboratory, Alberta Machine Intelligence Institute, University of Alberta
November 2018 – February 2020
- ❖ Conducted research on reinforcement learning focusing on step-size (learning rate) selection methods and catastrophic interference in online reinforcement learning agent
- ❖ Supervised by Professor Richard Sutton

Research Assistant, Group for Interventional Robotic and Imaging System, University of Hong Kong
July 2018 – September 2019

- ❖ *Conducted research on applying artificial intelligence and deep learning techniques to medical images*
- ❖ *Developed reinforcement learning agent to localize prostate lesions and lung opacities in MRI and X-ray images*
- ❖ *Supervised by Professor Ka Wai Kwok*

Machine Learning Researcher, capstone research project on depression detection with machine learning, University of Hong Kong
January 2018 – June 2018

- ❖ *Conducted research on classifying detection from social media text using various machine learning methods like support vector machines and deep neural networks*
- ❖ *Achieved an accuracy of 85%, using multichannel convolutional neural network, trained on both Chinese and English social media text data*
- ❖ *Received Certificate of Merit in IEEE (HK) Computational Intelligence Chapter FYP & PG Competition 2017-18*
- ❖ *Supervised by Professor Michael Chau*

Research Assistant, Business Analytics Laboratory, Faculty of Business, University of Hong Kong
Oct 2017 – June 2018

- ❖ *Provided technical work to on-going business analytics research projects in data mining, text mining and data crawling*
- ❖ *Supervised by Professor Michael Chau*

Research Assistant, National Center for Supercomputing Applications, University of Illinois at Urbana-Champaign
May- August 2017

- ❖ *Worked on Terra Data Fusion project, one of NASA's ACCESS projects*
- ❖ *Developed metadata generation programs for the data of the satellite TERRA, in compliant with NASA's standard*
- ❖ *Developed applications that handle and process petascale satellite data on supercomputer Blue Waters*
- ❖ *Supervised by Blue Water Professor – Professor Larry Di Girolamo, Dr. Guangyu Zhao and the HDF group*

ACCOMPLISHMENTS AND AWARDS

2nd runner up, AI Driving Olympics, International Conference on Robotics and Automation, IEEE
2019

- ❖ *Developed and deployed machine learning models (using reinforcement learning and imitation learning) onto robotic vehicle to participate in the Lane-following challenge of the competition*
- ❖ *Supervised by Professor Loretta Choi*

1st runner up, InnoTech Law Hackathon, Law Society of Hong Kong
2018

- ❖ *Developed a prototype to transcribe and summarize audio files using speech recognition and natural language processing technologies*

Winner, Cyberport University Partnership Programme, Cyberport, Hong Kong
2016

- ❖ *A financial technology (FinTech)-focused entrepreneurship programme*
- ❖ *Took business courses and received mentoring at Stanford Graduate School of Business*
- ❖ *Received HKD 100000 funding from Cyberport to further develop the award-winning FinTech project*
- ❖ *Developed and designed a virtual stock investment platform that aims to gamify the process to appeal to beginners*

1st runner up, National Finalist, Imagine Cup Hong Kong (Innovation), Microsoft
2016

- ❖ *Led a team of 5 people to develop a virtual reality mobile application using the Unity Engine*
- ❖ *Incorporated the concept of 'Memory Palace' into the application to improve one's learning efficiency*

VOLUNTEERING

Reviewer, ICML
2023, 2024
Reviewer, NeurIPS
2022, 2023

Programme Committee Member, AI for Agent-Based Modeling workshop, ICML
2022, 2023

Reviewer, IEEE Transactions on Intelligent Transportation Systems
September 2021

Senior Consultant, Oxford Strategy Group Digital
January-July 2021

- ❖ A machine learning consultancy project with startup companies CollectWise and BudFox
- ❖ *Develop time-series prediction models and automated trading model for cryptocurrencies trading*

Machine Learning Researcher, Rhodes Artificial Intelligence Lab (RAIL)
November 2020 – March 2022

- ❖ Work on improving an Informal Settlement Mapping too using machine learning in collaboration with the World Food Programme