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

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

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: PyTorch, Tensorflow, Keras, Sci-kit Learn
Cloud Computing: AWS, Azure

PUBLICATIONS

Lo, Yat Long, 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

Ghiassian, Sina, 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

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

Liu, Zhiyu, 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.

Lo, Yat Long, 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**)

De, Subham, 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.

Di Girolamo, Larry, 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.

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 Rich Sutton*

Undergraduate 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*

Undergraduate 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*

Undergraduate Research Assistant, National Center for Supercomputing Applications-Department of Atmospheric Science, 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*

INDUSTRY EXPERIENCE

Machine Learning Scientist Intern, Zebra Technologies
September 2021 – Current
- *Conduct research on decentralized planning in robotics systems*
- *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 Hong Kong
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

- *Pokeguide is a mobile navigation application, Ranked No.1 in the navigation category of Apple's AppStore with 100K downloads*
- *Developed features including geolocation, navigation and shops browsing system on the android mobile application with tools like RESTful APIs and Android's fragments*
- *Created the company's website*
- *Conducted business negotiations with shops in Hong Kong and strategic planning of application launch*

VOLUNTEERING

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 - Current

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

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*

Top 3 teams, CodeIT, Credit Suisse
2016

- *A* coding competition in algorithmic trading
- *Ranked 2nd in top earnings and ranked 3rd in the overall competition*

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*