

# Richie Lo Yat Long

E-MAIL [yat.lo@wolfson.ox.ac.uk](mailto:yat.lo@wolfson.ox.ac.uk)/[richielo@connect.hku.hk](mailto:richielo@connect.hku.hk) • WEBSITE <https://richielo.github.io/>

## EDUCATION

### University of Oxford

- ❖ Master of Science (Computer Science) (Incoming) – (Class of 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

### 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

### Wah Yan College, Kowloon

- ❖ Class of 2013

## ACADEMIC

**Certificate of Merit, FYP/PG Paper Competition, IEEE (HK) Computational Intelligence Chapter (2017-2018)**

## HONOURS

**Dean's Honours List (2017-2018)**

**Hong Kong Innovation and Technology Scholarship Award Scheme (2018)**

**Dean's Honours List (2016-2017)**

**Philip K H Wong Foundation Scholarships for Student Enrichment (2016)**

**HKU Foundation Scholarships for Outstanding Students (2013)**

## TECHNICAL SKILLS

**Programming:** Python, C#, C++, C, HTML, CSS, JavaScript, PHP, SQL, Java

**Machine Learning:** PyTorch, Tensorflow, Keras, Sci-kit Learn

**Cloud Computing:** AWS, Azure

## PUBLICATIONS

**Lo, Yat Long, Jia Pan, 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**, Adam White, **Improving Performance in Reinforcement Learning by Breaking Generalization in Neural Networks.** In Proceedings of the 19<sup>th</sup> 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. (in press). **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 11<sup>th</sup> 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

- ❖ Conduct 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

- ❖ Conduct research on applying artificial intelligence and deep learning techniques to medical images
- ❖ Develop 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

**Undergraduate Research Assistant, Distributed Autonomous System Laboratory, University of Illinois at Urbana-Champaign**

March- August 2017

- ❖ Worked on the effectiveness of hierarchical reinforcement learning on environments with delayed rewards
- ❖ Focused on the development of a generalizable learning agent for ATARI games with deep neural networks
- ❖ Supervised by Professor Girish Chowdhary

**Wireless Networking Research Project (Bluetooth Low Energy), University of Illinois at Urbana-Champaign**

February-May 2017

- ❖ A study on location identification with distributed Bluetooth beacons on varying signal strength and emission interval
- ❖ Conducted data analysis using Python to identify location fingerprints
- ❖ Supervised by Professor Robin Hilary Kravets

**INDUSTRY  
EXPERIENCE**

**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 S. Y. 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*
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## ACCOMPLISHMENTS AND AWARDS

**2<sup>nd</sup> 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*

**1<sup>st</sup> 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*

**Top 3 teams, CodeIT, Credit Suisse**  
2016

- ❖ *A coding competition in algorithmic trading*
- ❖ *Ranked 2<sup>nd</sup> in top earnings and ranked 3<sup>rd</sup> in the overall competition*

**1<sup>st</sup> 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*