

# TIN YIU LAI

Australian Citizen

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## PERSONAL STATEMENT

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I am an enthusiastic individual who persuades to exceed expectations. Collaboration and working as a team always help me to think from new angles. I am interested in solving complex challenges while developing elegant solutions and algorithms. The world of abstract thinking brings the beauty of simplicity. To me, engineering is about simplifying complexity.

## WORK & EXPERIENCE

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- Fait Corporation Pty Ltd** Brisbane, Australia  
*Chief Technology Officer* June 2024 – Present
- Lead the design and deployment of next-generation electric Vertical Take-Off and Landing (eVTOL) systems and sustainable aerospace technologies, integrating data-driven AI for autonomous decision-making, and digital twin asset management
  - Oversee the end-to-end tech stack for AAM platforms, including computer vision systems, propulsion design, sensor integration, flight control software, mission planning, emergency protocols, comm systems, and overall system integration
- Chief of Autonomy* Jan 2024 – June 2024
- Design autonomy system architecture for eVTOL aircraft, including vision, trajectory planning, control and optimisation
- Mission Systems Pty Ltd** Jun 2022 – Jan 2024  
*Computer and ML Scientist Lead* Sydney, Australia
- Develop autonomy algorithms for defence-related robotic systems, leveraging machine learning to optimise mission performance and decision-making
  - Designed and implemented embedding-based transformer vision model for texture generation; developed computer vision models for GPS-denied localisation in eVTOL
- Shoal Group Pty Ltd** Dec 2021 – Jul 2022  
*Machine Learning Engineer* Canberra, Australia
- Worked on maritime machine learning assurance, e.g., on Autonomous Underwater Vehicles (AUVs) operations
- Department of Defence – Defence Innovation Network** Dec 2021 – Apr 2022  
*Shoal Group Machine Learning PhD Intern* Canberra, Australia
- Initiative of the NSW Government with the Defence Science and Technology (DST) Group from the Australian Department of Defence, to utilise STEM PhD students' research skills on defence related projects
  - Worked with industry partner Shoal Group's *Blue Water R&D Team* on systematic analysis of using simulation derived synthetic SONAR data from autonomous maritime vehicles for underwater objection detection
- The University of Sydney** Sydney, Australia  
*Business Analytic Teaching Assistant · University of Sydney Business School* Feb 2022 – Jan 2024
- Organise Master's-level teaching materials as a TA on statistical and machine learning-based business analytic subjects, e.g., Time Series and Forecasting, Machine Learning and Data Mining in Business, etc.
- Computer Science Academic Staff · School of Computer Science* Jul 2019 – Jan 2024
- Teach and provide guidance to students, including Master's-level final year capstone projects and data science subjects
  - Review materials used in classes, explain various topics, answers questions, and supervise exams
- Research Assistant · School of Physics* Sep 2023 – Dec 2023
- Launched an astrophysics dashboard to visualise radio sources detected in the VAST survey for interactive data exploration
- Learning Advisor · The University of Sydney Library* Aug 2018 – Jun 2022
- Provide roving peer to peer support to students from a range of disciplines
  - Facilitate workshops, services, forums and online communities to engage and help students
  - Prompt innovation technologies, e.g., 3D printer/scanner, CNC machine, vinyl cutter, recording studio, VR
- ITAS Tutor · Indigenous Tutorial Assistance Scheme* 2016 – 2019 (Seasonal)

- Provided academic supports for indigenous students on subject concepts and exams—an academic initiative of the Commonwealth Government’s tutorial support scheme (Rehired in Apr–Jul 2016; May–Jul 2017; Apr–Oct 2018; Apr–Jul 2019)

Voluntary uni club executive · **Club & Societies** Mar 2013 – Nov 2017

- Organises, plans, and leads social activities to facilitate student engagement. Supervises general meeting and AGM with club executives. Communicates and organises events with uni coordinators, speakers, professors.

**Western Sydney University** Sydney, Australia

Cybersecurity Workshop Organiser · **School of Computer, Data and Mathematical Sciences** Sep 2023 – Feb 2024

Research Assistant · **School of Social Science** 2022 - 2024 (Seasonal)

- Digital trust initiatives using ML for detecting malicious activity in IoT & fraudulent behaviour in social computing contexts

**Freelance Technology Consultant** Apr 2013 – Jan 2021 (Seasonal)

Freelance Software Developer Remote / Sydney, Australia

- Designs and maintains eBusiness service with SQL backend, CI/CD pipelines, REST backend, and dynamic React frontend
- Consulted for various clients, advising on digital strategies, ML algorithm optimisation, predictive analytics & automation

**National Institute of Informatics (NII)** Jan 2019 – Mar 2019

Invited Researcher · **Unmanned aircraft system Traffic Management (UTM) lab** Tokyo, Japan

- Invited to an Unmanned aircraft system Traffic Management (UTM) lab on a deep learning based computer vision model, designed for drone-assisted applications such as search & rescue or surveillance, using only onboard hardware
- Developed a working prototype that can simultaneously performs real-time human detection and activity recognition using only the onboard camera and processing power on UAVs

**AECOM** Dec 2016 – Feb 2017

Geotechnical Intern 138 Shatin Rural Committee Road, Hong Kong

- Site monitoring on ELS (Excavation Lateral Support); check force balance/rotational moments within struts
- Designs multi-stages excavations and temporary working scaffold for structural support
- Schedules laboratory triaxial test of on-site drillholes, to obtain soil properties and site profile
- Use PLAXIS to obtain diaphragm walls forces, and SLOP/W & SEEP/W for modelling soil behaviour
- Involved in projects such as HK Metro Station Excavation, HK Airport Sub-sea Tunnel monitoring, etc.

**Meinhardt Group (C&S)** Dec 2015 – Feb 2016

Structural Team Trainee 33-35 Wong Chuk Hang Rd, Hong Kong

- Tasks includes modifying amendments for building department submission, updating CAD files of drafting, modelling collision impacts, verifying building standards calculations via ETABS & SAFE
- Worked as a group to check calculation of safety measure, e.g., connections and member capacity checking
- Created 3D models of structural interior or temporary work via software like Sketchup and Navisworks
- Involved in projects such as Ocean Park stadium tender, Boiler upgrades, HK airport hangar design

**Self Employed** Nov 2012 – Aug 2013

Private Tutor for High School students Sydney, Australia

- Develops lessons and activities on Maths & Physics for improving students’ study skills and test scores

## EDUCATION

**Doctor of Philosophy in Computer Science** Mar 2018 – Jun 2022

Artificial Intelligence, Machine Learning and Robotics The University of Sydney

- ▷ Doctoral thesis on—*Robot Learning and Planning with a Probabilistic Perspective*
- ▷ Research interests include statistical machine learning techniques, multiagent systems, motion planning and probabilistic predictions with applications in robotics

**Bachelor of Science in Computer Science, combined with** Mar 2013 – Nov 2017

**Bachelor of Engineering in Structural (Honours Class I)** The University of Sydney

- ▷ Computer Science major core studies included:

- Algorithms & Data structures
- Formal Language Theory
- ▷ Civil Engineering specialised in *Structural*, core studies included:
  - Finite Element Analysis
  - Partial Differential Equations
- Computational Complexity
- Object-Oriented Design
- Steel Structural Behaviour
- Fluid Behaviour
- Information Theory
- Artificial Intelligence
- Geotechnical Techniques
- Reinforce Concrete Design

**Cherrybrook Technology High School**, Cherrybrook, NSW 2126, Australia Jan 2006 – Dec 2012

HSC Subjects in:           - English                   - Engineering           - Mathematics           - Mathematics Ext.1  
                                   - Japanese               - Chemistry           - Physics

▷ Rank 1<sup>st</sup> in school in *Maths., Engineering*. HSC Band 6/E4 in in *Maths., Maths. Ext. 1, Engineering, Japanese*

## AWARDS, GRANTS & SCHOLARSHIPS

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**University of Sydney Completion Stipend Scholarship** Jul 2022

*Scholarships Office* *Commonwealth Gov. of Australia & University of Sydney*

· Established to support HDR students to complete their research studies, funded by the Commonwealth Gov. of Australia

**Defence Innovation Network Internship Scholarship** Dec 2021 – Apr 2022

*Defence Innovation Network (DIN)* *Defence Science and Technology (DST) Group & NSW Gov.*

· Scholarship that funds PhD students who are partnered in the DIN Internship program—a university-led initiative to enhances NSW capacity on Defence R&D, for incorporating latest innovations within academics

**Paulette Isabel Jones Completion Stipend Scholarship** Dec 2021

*Scholarships Office* *University of Sydney*

· A gift from the late Paulette Isabel Jones to support Higher Degree by Research students in their research endeavour

**Postgraduate Research Support Scheme (PRSS)** June 2019; July 2020; Nov 2021

*Faculty of Engineering – Higher Degree Research Administration Centre* *University of Sydney*

· Provide direct support for postgraduate students on conference expenses, field costs, publication costs, etc.

**University of Sydney Postgraduate Awards (UPA)** Mar 2018

*Scholarships Office* *University of Sydney*

· Designed to assist with general living costs and are awarded to students of exceptional research potential to undertake a higher degree by research at the university

**Research Training Program (RTP) Scholarships** Mar 2018

*Department of Education and Training* *Commonwealth Gov. of Australia*

· RTP fees offset support and pays for the tuition fees of a higher degree by research (HDR) student

**University of Sydney Honour Roll** 2017

*2017 University of Sydney Honour Roll* *University of Sydney*

· Awarded to students of distinction through the conferral of graduates honours from the Faculty of Engineering and Information Technologies

**School of Information Technologies High Honour Roll** Apr 2016

*School of IT 2016 Awards Ceremony* *University of Sydney*

· Awarded to individuals with distinguishing results in IT unit of studies in 2015

**School of Civil Engineering Paddle Pop Stick Bridge Competition** Jun 2014

*School of Civil Engineering (joint sponsored by Robert Bird Group & Talis Civil Pty Ltd)* *University of Sydney*

**Distinguished Achievers Award** 2012

*2012 Higher School Certificate (HSC)* *NSW Board of Studies, Australia*

· Certificates for *Distinguish Achievement* (highest level of performance) in HSC: awarded for (i) *Mathematics*, (ii) *Mathematics Extension 1*, (iii) *Engineering Studies*, and (iv) *Japanese Beginners*

**High School Academic Award** 2012

*Year 12 Academic Award Ceremony* *Cherrybrook Technology High School*

- Academic Awards for ranking 1<sup>st</sup> in (i) *Mathematics*, and (ii) *Engineering Studies* in the entire school

## ACADEMIC WORKS

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- Wenzheng Zhang, Fahira Afzal Maken, Tin Lai, and Fabio Ramos. Grasping by parallel shape matching. *Computing Research Repository (CoRR)*, 2024 [ [arXiv](#) ]
- Zeya Yin, Tin Lai, Subhan Khan, Jayadeep Jacob, Yonghui Li, and Fabio Ramos. Stein movement primitives for adaptive multi-modal trajectory generation. In *2024 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pages 11901–11908, 2024 [ [article](#) ]
- Tin Lai, Weiming Zhi, Tucker Hermans, and Fabio Ramos. Neural Kinodynamic Planning: Learning for KinoDynamic Tree Expansion. In *2024 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pages 11789–11795, 2024 [ [article](#), [arXiv](#) ]
- Tin Lai and Philippe Morere. Do One Thing and Do It Well: Delegate Responsibilities in Classical Planning. In *2024 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pages 9714–9720, 2024 [ [article](#), [arXiv](#) ]
- Tin Lai, Farnaz Farid, Abubakar Bello, and Fariza Sabrina. Ensemble learning based anomaly detection for IoT cybersecurity via Bayesian hyperparameters sensitivity analysis. *Cybersecurity*, 7(1):44, Jun 2024 [ [article](#), [arXiv](#) ]
- Tin Lai. Interpretable Medical Imagery Diagnosis with Self-Attentive Transformers: A Review of Explainable AI for Health Care. *Explainable Artificial Intelligence (XAI) in Biomedical Research and Clinical Practice*, Special Issue of *BioMedInformatics*, 4(1):113–126, 2024 [ [article](#), [arXiv](#) ]
- Lucas Barcelos, Tin Lai, Rafael Oliveira, Paulo Borges, and Fabio Ramos. Path signatures for diversity in probabilistic trajectory optimisation. *The International Journal of Robotics Research*, 2024 [ [article](#) ]
- Tin Lai, Yukun Shi, Zicong Du, Jiajie Wu, Ken Fu, Yichao Dou, and Ziqi Wang. Supporting the Demand on Mental Health Services with AI-Based Conversational Large Language Models (LLMs). *Deep Learning Methods and Application for Bioinformatics and Healthcare*, Special Issue of *BioMedInformatics*, 4(1):8–33, 2024 [ [article](#), [arXiv](#) ]
- Tin Yiu Lai. *Robot Learning and Planning with a Probabilistic Perspective*. PhD thesis, Faculty of Engineering, School of Computer Science, The University of Sydney, 2023 [ [article](#) ]
- Tin Lai. Real-Time Aerial Detection and Reasoning on Embedded-UAVs in Rural Environments. *IEEE Transactions on Geoscience and Remote Sensing*, 61:1–7, 2023 [ [article](#), [arXiv](#) ]
- Xiaoting Xu, Tin Lai, Sayka Jahan, Farnaz Farid, and Abubakar Bello. A Machine Learning Predictive Model to Detect Water Quality and Pollution. *Machine Learning Perspective in the Convolutional Neural Network Era*, Special Issue of *Future Internet*, 14(11):324, 2022 [ [article](#) ]
- Tin Lai. Discover Life Skills for Planning as Bandits via Observing and Learning How the World Works. In *IEEE/RSJ Proceedings of The International Conference on Intelligent Robots and Systems (IROS)*, pages 11360–11365. IEEE, 2022 [ [article](#), [arXiv](#) ]
- Tin Lai and Fabio Ramos. LTR\*: Rapid Replanning in Executing Consecutive Tasks with Lazy Experience Graph. In *IEEE/RSJ Proceedings of The International Conference on Intelligent Robots and Systems (IROS)*, pages 8784–8790. IEEE, 2022 [ [article](#), [arXiv](#) ]
- Tin Lai. A Review on Visual-SLAM: Advancements from Geometric Modelling to Learning-Based Semantic Scene Understanding using Multi-Modal Sensor Fusion. *Simultaneous Localization and Mapping for Mobile Robot Navigation*, Special Issue of *Sensors*, 22(19):7265, 2022 [ [article](#), [arXiv](#) ]
- Hansel Hu, Tin Lai, and Farnaz Farid. Feasibility study of constructing a screening tool for adolescent diabetes detection applying machine learning methods. *Applications of Body Worn Sensors and Wearables*, Special Issue of *Sensors*, 22(16):6155, 2022 [ [article](#) ]

- Weiming Zhi, Tin Lai, Lionel Ott, Edwin Bonilla, and Fabio Ramos. Learning Efficient and Robust Ordinary Differential Equations via Invertible Neural Networks. In *Proceedings of the 39th International Conference on Machine Learning (ICML)*, volume 162 of *Proceedings of Machine Learning Research*, pages 27060–27074. PMLR, 2022 [ [article](#), [arXiv](#), [video](#) ]
- Weiming Zhi, Tin Lai, Lionel Ott, and Fabio Ramos. Diffeomorphic Transforms for Generalised Imitation Learning. In *Proceedings of The 4th Annual Learning for Dynamics and Control Conference (LADC)*, volume 168 of *Proceedings of Machine Learning Research*, pages 508–519. PMLR, 2022 [ [article](#) ]
- Tin Lai, Weiming Zhi, Tucker Hermans, and Fabio Ramos. Parallelised Diffeomorphic Sampling-based Motion Planning. In *Proceedings of the 5th Conference on Robot Learning (CoRL)*, volume 164 of *Proceedings of Machine Learning Research*, pages 81–90. PMLR, 2022 [ [article](#), [arXiv](#) ]
- Tin Lai and Fabio Ramos. Adaptively Exploits Local Structure with Generalised Multi-Trees Motion Planning. *IEEE Robotics and Automation Letters (RA-L)*, 7(2):1111–1117, 2022 [ [article](#), [arXiv](#) ]
- Xipei Wang, Haoyu Zhang, Yuanbo Zhang, Meng Wang, Jiarui Song, Tin Lai, and Matloob Khushi. Learning Non-Stationary Time-Series with Dynamic Pattern Extractions. *IEEE Transactions on Artificial Intelligence (TAI)*, 3(5):778–787, 2022 [ [article](#), [arXiv](#) ]
- Tin Lai. sbp-env: A python package for sampling-based motion planner and samplers. *Journal of Open Source Software*, 6(66):3782, 2021 [ [article](#), [arXiv](#) ]
- Tin Lai and Fabio Ramos. PlannerFlows: Learning Motion Samplers with Normalising Flows. In *IEEE/RSJ Proceedings of The International Conference on Intelligent Robots and Systems (IROS)*, pages 2542–2548. IEEE, 2021 [ [article](#), [arXiv](#) ]
- Weiming Zhi, Tin Lai, Lionel Ott, and Fabio Ramos. Trajectory Generation in New Environments from Past Experiences. In *IEEE/RSJ Proceedings of The International Conference on Intelligent Robots and Systems (IROS)*, pages 7911–7918. IEEE, 2021 [ [article](#), [arXiv](#) ]
- Weiming Zhi, Tin Lai, Lionel Ott, and Fabio Ramos. Anticipatory Navigation in Crowds by Probabilistic Prediction of Pedestrian Future Movements. In *Proceedings of The International Conference on Robotics and Automation (ICRA)*, pages 8459–8464. IEEE, 2021 [ [article](#), [arXiv](#) ]
- Tin Lai, Philippe Morere, Fabio Ramos, and Gilad Francis. Bayesian local sampling-based planning. *IEEE Robotics and Automation Letters (RA-L)*, 5(2):1954–1961, April 2020 [ [article](#), [arXiv](#) ]
- Tin Lai, Weiming Zhi, and Fabio Ramos. Occ-traj120: Occupancy maps with associated trajectories. *Computing Research Repository (CoRR)*, 2019 [ [arXiv](#) ]
- Rúben Geraldes, Artur Gonçalves, Tin Lai, Mathias Villerabel, Wenlong Deng, Ana Salta, Kotaro Nakayama, Yutaka Matsuo, and Helmut Prendinger. UAV-based situational awareness system using deep learning. *IEEE Access*, 7:122583–122594, 2019 [ [article](#), [video](#) ]
- Tin Lai, Fabio Ramos, and Gilad Francis. Balancing global exploration and local-connectivity exploitation with rapidly-exploring random disjointed-trees. In *Proceedings of The International Conference on Robotics and Automation (ICRA)*, pages 5537–5543. IEEE, 2019 [ [article](#), [arXiv](#), [video](#) ]
- Faham Tahmasebinia, Marjo Niemelä, Sane Ebrahimzadeh Sepasgozar, Tin Yiu Lai, Winson Su, Kakarla Reddy, Sara Shirowzhan, Samad Sepasgozar, and Fernando Marroquin. Three-dimensional printing using recycled high-density polyethylene: Technological challenges and future directions for construction. *Buildings*, 8(11):165, 2018 [ [article](#) ]
- Tin Lai. Numerical modelling of structural behaviour of continuously reinforced concrete pavement. Bachelor’s Honours Thesis, The University of Sydney, Oct 2017 [ [engrXiv](#) ]

## PROFESSIONAL ACTIVITIES

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### Teaching Experience

- 2023 S2C - QBUS6810 *Statistical Learning and Data Mining*
- 2023 S2C - QBUS6860 *Visual Data Analytics*
- 2023 S2C - COMP5703/DATA5703 *Capstone Project*
- 2023 S1C - QBUS6810 *Statistical Learning and Data Mining*
- 2023 S1C - COMP5703/DATA5703 *Capstone Project*
- 2022 S2C - QBUS6830 *Financial Time Series and Forecasting*
- 2022 S2C - QBUS3840 *Choice Modelling*
- 2022 S2C - COMP5703/DATA5703 *Capstone Project*
- 2022 S1C - COMP5703/DATA5703 *Capstone Project*
- 2022 S1C - QBUS3820 *Machine Learning and Data Mining in Business*
- 2022 S1C - QBUS3850 *Time Series and Forecasting*
- 2021 S2C - COMP5703/DATA5703 *Capstone Project*
- 2021 S2C - COMP5310 *Principles of Data Science*
- 2021 S1C - COMP5703/DATA5703 *Capstone Project*
- 2020 S2C - COMP5703/DATA5703 *Data Science Capstone Project*
- 2020 S2C - DATA1002/DATA1902 *Informatics: Data and Computation*
- 2020 S1C - COMP5703/DATA5703 *Data Science Capstone Project*
- 2019 S2C - DATA1002/DATA1902 *Informatics: Data and Computation*
- 2019 S2C - ITAS for COMP2007/COMP2907 *Algorithm and Complexity*
- 2019 S2C - ITAS for INFO1105 *Data Structure*
- 2019 S2C - COMP5703/DATA5703 *Data Science Capstone Project*
- 2018 S2C - ITAS for COMP2007/COMP2907 *Algorithm and Complexity*
- 2017 S1C - ITAS for COMP3109 *Programming Language and Paradigm*
- 2017 S1C - ITAS for INFO1105 *Data Structure*
- 2016 S1C - ITAS for COMP2007/COMP2907 *Algorithm and Complexity*
- 2016 S1C - ITAS for INFO1103 *Introduction to Programming*

### **Review Activities for Journals and Conferences**

- 2024 PMLR - *Conference on Robot Learning (CoRL)*
- 2024 IEEE/RSJ - *The International Conference on Intelligent Robots and Systems (IROS)*
- 2024 IEEE - *Robotics and Automation Letters (RA-L)*
- 2023 PMLR - *Conference on Robot Learning (CoRL)*
- 2023 IEEE/RSJ - *The International Conference on Intelligent Robots and Systems (IROS)*
- 2023 IEEE - *Robotics and Automation Letters (RA-L)*
- 2023 IEEE - *The International Conference on Robotics and Automation (ICRA)*
- 2022 IEEE/RSJ - *The International Conference on Intelligent Robots and Systems (IROS)*
- 2022 MDPI - *Applied Sciences (ISSN 2076-3417)*
- 2022 MDPI - *Energies (ISSN 1996-1073)*
- 2022 SAGE - *International Journal of Advanced Robotic Systems (IJARS)*
- 2022 MDPI - *Buildings (ISSN 2075-5309)*
- 2021 IEEE/RSJ - *The International Conference on Intelligent Robots and Systems (IROS)*
- 2021 MDPI - *Applied Sciences (ISSN 2076-3417)*
- 2021 MDPI - *Buildings (ISSN 2075-5309)*
- 2021 SAGE - *International Journal of Advanced Robotic Systems (IJARS)*
- 2021 MDPI - *ISPRS International Journal of Geo-Information (IJGI) (ISSN 2220-9964)*
- 2021 IEEE - *The International Conference on Robotics and Automation (ICRA)*
- 2020 IEEE/RSJ - *The International Conference on Intelligent Robots and Systems (IROS)*
- 2020 IEEE - *The International Conference on Robotics and Automation (ICRA)*
- 2020 SAGE - *International Journal of Advanced Robotic Systems (IJARS)*
- 2020 MDPI - *ISPRS International Journal of Geo-Information (IJGI) (ISSN 2220-9964)*
- 2020 MDPI - *Applied Sciences (ISSN 2076-3417)*
- 2020 MDPI - *Buildings (ISSN 2075-5309)*
- 2019 IEEE - *The International Conference on Robotics and Automation (ICRA)*

- 2019 PMLR - Conference on Neural Information Processing Systems Workshop (NeurIPS)

## Talks, Seminars, and Tours

- 2024 Oct. IROS (Abu Dhabi, UAE): *Learning for Kinodynamic Tree Expansion*
- 2024 Oct. IROS (Abu Dhabi, UAE): *Do One Thing and Do It Well: Delegate Responsibilities in Classical Planning*
- 2024 Mar. Google Explore CSR Workshop (The University of Western Sydney): *Cybersecurity for Machine Learning Workshop*
- 2022 Oct. IROS (Kyoto, Japan): *Discover life skills for planning with bandits via learning how the world works*
- 2022 Oct. IROS (Kyoto, Japan): *Rapid Replanning in Consecutive Pick-and-Place Tasks with Lazy Experience Graph*
- 2021 Nov. CoRL (London, UK/virtual): *Parallelised Diffeomorphic Sampling-based motion Planning*
- 2021 Oct. USYD PeerPod Podcast: *“Ask HDR” - What I wish I knew when I started my PhD*
- 2021 Sep. IROS (Czech Republic/virtual): *Learning Motion Samplers with Normalising Flows*
- 2021 Aug. U.Sydney Library: *Think. Create. Innovate.*
- 2021 May. U.Sydney Library: *Technology Tour on Drone and VR Demonstration*
- 2021 Mar. U.Sydney Library: *New Semester Welcoming Week Tour at Fisher Library*
- 2021 Mar. U.Sydney Faculty of Science: *Think. Create. Innovate.*
- 2020 Feb. U.Sydney Library: *University of Sydney Library Tour*
- 2020 Feb. U.Sydney Faculty of Engineering: *Engineering New Students Orientation*
- 2019 Sep. U.Sydney HDR Talk: *“How to HDR” - Experience on getting started as a PhD*
- 2019 Aug. Reading Group: *Presenting recent works on Learning-based Motion Planning and Predictions*
- 2019 Jul. U.Sydney Faculty of Engineering: *Postgraduate Welcoming Talk for Commencing Students*
- 2019 May. ICRA (Montreal): *Balancing Global Exploration and Local-Conn. Exploitation with RRdT*
- 2019 Mar. NII (Tokyo): *Simultaneous Pedestrians Detection and Multi-Activities Recognition*
- 2018 Oct. CTDS Reading Group: *Presenting recent advancements on Gaussian Process*

## Technology Workshops

- 2022 Jun. U.Sydney ThinkSpace: *Programmable Electronics: Learn to fly & code with Tello Drone*
- 2022 May. U.Sydney CreateSpace: *Workshop on 3D Scanning and Techniques*
- 2022 Apr. U.Sydney ThinkSpace: *Programmable Electronics: Learn to fly & code with Tello Drone*
- 2021 Oct. U.Sydney CreateSpace: *Workshop on 3D Modelling with Fusion 360 (online)*
- 2021 Oct. U.Sydney CreateSpace: *Workshop on 3D Printing & Modelling (online)*
- 2021 Sep. U.Sydney CreateSpace: *Workshop on 3D Printing & Modelling (online)*
- 2021 Jun. U.Sydney CreateSpace: *Workshop on 3D Scanning and Techniques*
- 2021 Jun. U.Sydney School of Physics: *Flexible Learning Space for Day Conference*
- 2021 May. U.Sydney ThinkSpace: *Programmable Electronics: Learn to fly & code with Tello Drone*
- 2021 May. U.Sydney CreateSpace: *Workshop on 3D Printing 101 (hybrid)*
- 2021 Apr. U.Sydney School of Business: *BUS5221 Q&A session*
- 2021 Apr. U.Sydney CreateSpace: *Workshop on 3D Printing 101 (hybrid)*
- 2021 Mar. U.Sydney CreateSpace: *Workshop on 3D Scanning and Techniques*
- 2021 Mar. U.Sydney Library: *Student Orientation on Plan Your Semester*
- 2021 Mar. U.Sydney CreateSpace: *Workshop on 3D Scanning and Techniques*
- 2021 Mar. U.Sydney ThinkSpace: *Workshop on 3D Printing 101*
- 2021 Mar. U.Sydney ThinkSpace: *Workshop on Programming with Drone*
- 2020 Oct. U.Sydney ThinkSpace: *Drone Workshop for Student Experience Team Development Day*
- 2020 Mar. OzBerry: *Workshop on Open Source Hardware & Software*
- 2020 Mar. U.Sydney ThinkSpace: *Workshop on Programming with Drone*
- 2020 Feb. U.Sydney ThinkSpace: *Workshop on CNC Carving Machine*
- 2019 Oct. U.Sydney ThinkSpace: *Workshop on Programming with Drone*
- 2019 Sep. OzBerry: *Workshop on Open Source Hardware & Software*
- 2019 Sep. U.Sydney ThinkSpace: *Workshop on Soldering Techniques*
- 2019 Jul. U.Sydney ThinkSpace: *Workshop on 3D Printing 101*
- 2019 May. U.Sydney ThinkSpace: *Workshop on CNC Router Machine and Design*
- 2019 Apr. OzBerry: *Workshops on Open Source Hardware & Software*

- 2018 Dec. OzBerry: *Workshops on Open Source Hardware & Software, e.g., Arduino, RaspberryPi, Beaglebone, Open WRT, Android, etc.*

### Program Committees

- 2021–2022 U.Sydney Library: “How to HDR (Higher Degree by Research)” Podcast Preparation
- 2021–2022 U.Sydney ThinkSpace/CreateSpace: Design workshops learning outcomes and curriculum
- 2020–2022 U.Sydney ThinkSpace/CreateSpace: Technology workshops Organiser
- 2019–2020 U.Sydney ThinkSpace: Technology workshops Organiser

### Seasonal University-wise Services

- 2019–2022 U.Sydney AIU: Academic consultations for students in breach of academic integrity
- 2019–2022 U.Sydney ThinkSpace/CreateSpace: Workshops on CNC, 3D printing, VR, Electronics
- 2019–2022 U.Sydney Exam Ready—Workshops on outlining exam study and preparation plan
- 2019–2022 U.Sydney Library: Focus & Study—Workshop on the Pomodoro technique

## PERSONAL STRENGTHS

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### Key Skills

- Critical thinking in approaching challenges
- Quick adaptation in unseen environment
- Visualise complex problem w/ abstract thinking

### Language

- Bilingual in *English, Cantonese*
- Basic in *Mandarin, Japanese*

## TECHNICAL STRENGTHS

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<b>Computer Languages</b>	C, C++, Python, Rust, FORTRAN, CUDA, WGSL, Java, Kotlin, Go, $\LaTeX$ , SQL, jQuery, PHP, JavaScript, TypeScript, MATLAB, R, VBA, Shell Scripts (POSIX shell/bash/fish/DOS batch), Processing, Lisp, Haskell, ProLog, ANTLR4
<b>AI &amp; ML Tools</b>	Pytorch, MLflow, DVC, Prefect, Airflow, Hugging Face, LangChain, Jupyter
<b>Infra &amp; Observability</b>	Docker, Nix, Ansible, Kubernetes, WireGuard, OpenTelemetry, Grafana, Prometheus
<b>Middleware &amp; Protocols</b>	ROS, MOOS-IvP, Cap'nProto, Protobuf, RPC, ZeroMQ, MQTT, RESTful APIs
<b>Professional Applications</b>	AutoCAD, Google SketchUp, Weka, Strand7, Abaqus FEA, RAPT, ETABS, SAFE, PLAXIS, SLOPE/W, SEEP/W, Navisworks
<b>Operating Systems</b>	Linux variants (Arch, Ubuntu, Debian, CentOS, NixOS, etc.), Windows