

EDUCATION

University of Oxford — *DPhil Engineering Science (Robotics)*

OCTOBER 2023 – PRESENT

PhD programme with the Oxford Robotics Institute focusing on planning using Markov Decision Processes in uncertain graph-based environments. Supervisors: Nick Hawes and Bruno Lacerda.

- Investigated world models for graph-based environments with dynamic topologies.
- Created GNN-based architecture for learning graph-based algorithms in both P-hard and NP-hard problem contexts, using imitation learning and reinforcement learning.
- Designed novel algorithm for solving very large goal-driven deterministic POMDPs.
- Supervised projects of several early PhD students, Master's students, and interns.
- Reviewer for NeurIPS, AAAI, ICLR, ICRA, ECMR, TAROS, ECAI, LoG, RLC.

Key areas: Reinforcement Learning, Graph Neural Networks, POMDPs, Planning under Uncertainty

University of Adelaide — *B.Eng (Hons)(Mechatronics) w B.MaCSci (Pure Maths)*

JANUARY 2016 – DECEMBER 2020

Awarded First Class Honours with a GPA of 6.919/7.

Key subjects: Robotics, Control Systems, Microcontroller Programming, Groups & Rings, Real Analysis

Honours project: Modelling Mining Trucks for Hauling Predictions

- Trained and evaluated different machine learning models on raw truck data.

PUBLICATIONS

Tackling GNARLy Problems: Graph Neural Algorithmic Reasoning Reimagined through Reinforcement Learning

TMLR 2026 | arXiv:2509.18930

A Schutz, VA Darvari, E Panagiotaki, B Lacerda, N Hawes

A Finite-State Controller Based Offline Solver for Deterministic POMDPs

IJCAI 2025 | arXiv:2505.00596

A Schutz, Y You, M Mattamala, I Caliskanelli, B Lacerda, N Hawes

Scalable Solution Methods for Dec-POMDPs with Deterministic Dynamics

AAAI 2026 | arXiv:2508.21595

Y You, A Schutz, Z Li, B Lacerda, R Skilton, N Hawes

Partially Observable Monte-Carlo Graph Search

ICAPS 2025 | arXiv:2507.20951

Y You, V Thomas, A Schutz, R Skilton, N Hawes, O Buffet

EXPERIENCE

Stateful Robotics — *Software Engineering Intern*

FEBRUARY 2026 – MAY 2026

Design and development of planning algorithms for robot intelligence in industrial applications.

- Created hierarchical heuristic-powered planning approach for scalable application of MDPs
- Delivered key customer deadlines in critical stages of early startup

University of Oxford — *Lead Tutor, Robotics*

DECEMBER 2024 – FEBRUARY 2025

Course design and teaching of a week-long practical robotics course for 1st-year PhD students.

- Rewrote course content for new hardware and greatly improved teaching experience.
- Delivered content concerning ROS, perception, control, planning, SLAM, and MDPs.

Myriota — *Rapid Prototyping Engineer*

JANUARY 2021 – SEPTEMBER 2023

Development of algorithms and software for the operation of satellite hardware in IoT applications.

- Designed software tools using C/C++ and Python for large scale cloud-based simulations
- Architected software solutions to coordinate radio transmissions and receptions on a satellite
- Designed PCB layouts and developed FPGA applications for real-time decoding

AWARDS

General Sir John Monash Scholar | 2023

A highly prestigious postgraduate scholarship granted to a small number of Australians each year who demonstrate outstanding leadership potential and who wish to study overseas.

University of Adelaide

- Valedictorian for Mechanical Engineering, Frederic Barnes Waldron Best Student Award, Mechatronic Engineering Student Prize, Most Outstanding Engineering Student Prize, R.J. Jennings Memorial Prize for Mechanical Engineering Design Prize | 2021
- Nancy Webb Prize in Mathematics | 2019
- Andy Thomas Scholarship | 2016

SKILLS

- **Programming:** Python, C/C++, MATLAB
- **Machine learning:** Graph Neural Networks, Reinforcement learning, Supervised learning
- **Frameworks:** PyTorch Geometric, PyTorch, JAX, SB3, WandB
- **Research & leadership:** Teaching, Research communication, Mentorship, Peer review

COMMUNITY BUILDING

Robotics Inclusive — *Founder / Team Lead ('24-Present)*

- Partnering with organisations to promote inclusive practices in the robotics industry

Oxford Robotics Graduate Society — *President ('25-'27), Secretary ('25-'26), Treasurer ('24-'25)*

- Founder of the organisation
- Planned regular events for 50+ students within the Oxford Robotics Institute

Australian Rover Challenge — *Judge ('26, '25)*

- Served as a technical judge evaluating and providing feedback on CDR and SAR reports

Oxford University Korfball Club — *Kit Sec ('26-'27), Secretary ('24-'25), IT Officer ('25-'26)*

- Built a new website and architected a marketing presence
- Organised weekly league matches and tracking player statistics

Volunteering and Outreach

- **Oxplore 2024** - multi-day outreach leading robot demonstrations for 11-18 year olds.
- **ORI demonstrations** - Running robot demos for stakeholders, investors, and school outreach
- **Bullington Community Lunches** - Coordinating monthly free lunches in the local community