Nathan Monette

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EDUCATION

University of Oxford — **Oxford, UK**
M.Sc. in Advanced Computer Science — *October 2025 - September 2026*

University of California, Irvine — **Irvine, CA**
B.Sc. (Hons) in Computer Science — *September 2021 - June 2025*

- GPA: 3.7 (undergraduate), 4.0 (graduate).
- Selected coursework (undergraduate): Linear Algebra I, II, and III, Project in Reinforcement Learning.
- Selected coursework (graduate): Algorithmic Game Theory, Probabilistic Learning, Learning in Graphical Models, Deep Learning, Scientific Computing

RESEARCH EXPERIENCE

Nokia Bell Labs / University of Oxford — **Oxford, UK**
Research Intern with Alvaro Valvarce / Prof. Jakob Foerster — *July 2025 - Present*

- Constructed a dataset to post-train LLMs for the emulation of 5G network messages.
- Post-trained LLMs using SFT alongside a custom tokenizer in order to improve emulation performance.
- Performed multi-agent reinforcement learning experiments to learn emergent network protocols.

University of Oxford — **Oxford, UK**
Research Intern with Prof. Jakob Foerster — *June 2024 - March 2025*

- Independently proposed a project to Prof. Foerster, leading to a fully-funded internship.
- Led writing, experimental design, and method design for a paper on utilising min-max optimisation to derive theoretical guarantees for unsupervised environment design, published at Reinforcement Learning Conference 2025.

University of California, Irvine — **Irvine, CA**
Undergraduate Researcher with Prof. Ioannis Panageas — *April 2023 - June 2025*

- Managed experiments for a project on RL in adversarial team Markov games in PyTorch.
- Re-implemented models and training code in JAX to improve experiment runtime.
- Learned techniques relating to min-max, nonconvex, and convex optimization.
- Mentored younger students interested in research.

University of California, Irvine — **Irvine, CA**
Undergraduate Researcher with Prof. Roy Fox — *October 2024 - June 2025*

- Continuing development of RL environments for control tasks with multi-agent aspects.
- Ongoing experiments aiming to leverage offline data to accelerate large-scale multi-agent reinforcement learning tasks.

University of California, Irvine — **Irvine, CA**
Undergraduate Researcher with Shion Fukuzawa (teaching fellow) — *April 2024 - June 2024*

- Developed the backend for an educational tool for quantum computing, which was used to teach the CHSH game for a 100+ student lecture the following year.
- Explored "n-player" variants of the CHSH game and quantifications of entanglement.

RESEARCH PAPERS

An Optimisation Framework for Unsupervised Environment Design
Nathan Monette, Alistair Letcher, Michael Beukman, Matthew T. Jackson, Alexander D. Goldie, Jakob N. Foerster
➢ *Reinforcement Learning Conference 2025*

Leveraging Offline Data for Large-Scale Multi-Agent Reinforcement Learning
JB Lanier*, **Nathan Monette***, Roy Fox
➢ *Working paper*

TALKS AND PRESENTATIONS

An Optimisation Framework for Unsupervised Environment Design

- Oral talk and poster presentation at Reinforcement Learning Conference 2025.

What Does Game Theory Teach Us about Open-Endedness?

- Extended talk at the 2025 London Open Endedness Summit at Imperial College London.

HACKATHONS

UK Government AI Incubator Hackathon **London, UK**
Perf-nect *November 2024*

- Awarded finalist in government sponsored AI hackathon related to energy sustainability and governance.
- Cooperated with a team of 4 UK government researchers on creating an app to handle applications for resources to join the national power grid.
- Implemented a Bradley-Terry preference model to create a human-in-the-loop system to accelerate processing of a large backlog of applications.
- Invited to present our work at *10 Downing Street* to UK Prime Minister Keir Starmer.

Hack at UCI **Irvine, CA**
ZotScheduler *February 2023*

- Achieved a second place prize out of over 60 teams, with over 400 total participants in the hackathon.
- Cooperated with two teammates to construct a working app in less than 36 hours.
- Utilized ensemble tree regression models (XGBoost), and search algorithms to recommend schedules to students based on a list of potential classes.

SERVICE

UC Irvine Computer Science Department Curriculum Committee **Irvine, CA**
Student Representative *Sept 2023 - June 2025*

- Served as the sole representative of over 2,000 undergraduate students to a faculty committee in charge of curriculum design.
- Authored the first draft of the department's new undergraduate degree requirements.
- Presented community feedback in course evaluation and design from around 100 students and alumni.

SKILLS & INTERESTS

Proficient: Python, JAX, NumPy, LaTeX **Competent:** C++, TensorFlow, PyTorch, SciKit-Learn
Interests: I am interested in game theory and reinforcement learning as well as pedagogy, specifically regarding the design of curriculum and how to properly create the requisite background for students who want to learn ML.