Scarllette Ellis

PhD Researcher - Reinforcement Learning (she/her)

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A PhD student in **reinforcement learning**. I have experience in **research**, **public speaking**, **teaching** undergraduates and postgraduates, and **tutoring students**. My research is on the **mathematical underpinnings** of **hierarchical reinforcement learning**, and how AI performs in **tabletop games** that simulate **real-world scenarios**.

Education

Doctor of Philosophy in Computer Science   Oct 2023 - Oct 2028
University of Bath, UK   (expected)
Supervisors: Professor Özgür Şimşek, Professor Guy McCusker

MRes in Accountable, Responsable, and Transparent AI   Oct 2023-Oct 2024
University of Bath, UK
Supervisors: Professor Özgür Şimşek, Professor Guy McCusker
Dissertation: *Unifying Graph and Information Skill Discovery in Reinforcement Learning*

Masters in Mathematics and Computer Science   Sep 2019 - Jul 2023
University of Bath, UK
Grade: 1st (Hons)
Masters Dissertation: *Using Information and Graph Theory for Hierarchical Skill Discovery in Reinforcement Learning*
Undergraduate Dissertation: *Reinforcement Learning in the Board Game Pandemic*

Teaching and Supervision

Tutor   Sep 2022 - Present
University of Bath, UK
Teaching:

- Reinforcement Learning (Undergraduate & Masters Level)
- Bayesian Machine Learning (Masters Level)
- Artificial Intelligence (Undergraduate Level)

Responsibilities:

- Planning and delivering tutorials for undergraduate and postgraduate students.
- Marking coursework and providing feedback to students.
- Writing, running, and debugging automarking code.

Dissertation Supervision   Sep 2024-Present
University of Bath, UK

- Marking of student work and providing feedback on their writing.
- Helping students solve theoretical and technical problems.
- Giving guidance to students on their project direction.

Skills

Conceptual: Mathematics, linear algebra, machine learning
Programming: Python, Jax, NumPy, Matplotlib, LaTeX, Manim
Personal: Communicating complex concepts, delivering talks, managing students

Work Experience

Lab Manager - Bath Reinforcement Learning Lab   Sep 2025- Dec 2025
University of Bath, UK
- Organising and facilitating lab activities for more than 15 members.
- Activities include weekly lab meetings, paper discussions, and writing feedback sessions.

Automarking Internship   Jun 2023–Sep 2023
University of Bath, UK
- Investigating the current state of automarking within the University of Bath Computer Science Department.
- Conducting interviews on how automarking was being used by lecturers.
- Delivering a seminar on how automarking was being used and providing advice on how best to use it, and the potential problems it has.

Lab Intern - Bath Reinforcement Learning Lab   Jun 2022–Sep 2022
University of Bath, UK
- Investigating hierarchical reinforcement learning methods.
- Contributing to internal talks and paper discussions within the lab.

Head of TTRPGs - Tabletop Gaming Society   Sep 2020-Jun 2021
University of Bath, UK
- Organising and running frequent society events.
- Running regular Dungeons & Dragons games.

Student Ambassador   Sep 2020–Jun 2023
University of Bath, UK
- Providing university campus tours to prospective students.
- Giving advice on student life and insights on studying at university.

Barista - Costa Coffee   Aug 2018-Jan 2020
Odeon Bridgend, UK
- Brewing delicious and consistent coffee during busy times.
- Talking with customers to create a warm and welcoming atmosphere.
- Maintaining a high standard of hygiene and cleanliness in a food preparation area.

Talks and Events

Whose Science Is It Anyway? Using Improv theatre and Dungeons & Dragons to enhance science communication skills   Jul 2025
BIG Event 2025 - Royal Institution

Being Prepared: Creating Multi-Level Skill Hierarchies using Graph and Information Theory   Oct 2024
University of Bath Centre for Mathematics and Algorithms for Data

The Current State and Best Practices for University Automarking   Sep 2023
University of Bath Lecturer Training Day

Charity Dungeons and Dragons Live Stream   Apr 2021
Off the Record Bath