

Michael Matthews

Machine Learning PhD Student

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Education

October 2023 - PRESENT

University of Oxford – DPhil Engineering Science

- Broadly interested in reinforcement learning (RL) with a focus on open-ended environments.
- Supervised by Dr. Jakob Foerster.
- Funded by an EPSRC DTP Research Studentship.

September 2020 - September 2021

University College London – MSc Machine Learning

- Distinction (84%)
- Thesis titled 'A new method and benchmark for skill transfer in reinforcement learning' supervised by Prof. Tim Rocktäschel, Prof. Edward Grefenstette and Mikayel Samvelyan.

September 2017 - July 2020

University of Cambridge – BA Computer Science

- Year 3 - Class 2.1 (75%) [Rank unknown] (*Grade boundary for class 1 was 77%*)
- Year 2 - Class 2.1 (69%) [Rank 36/102]
- Year 1 - Class 1 (70%) [Rank 20/101]

September 2010 - July 2017

City of Norwich School – Student

- A Levels - Maths (A*), Further Maths (A*), Computer Science (A*) and Physics (A*)

Experience

October 2021 - June 2023

VivaCity, London – Machine Learning Researcher (Reinforcement Learning team)

- Experiment with applying methods from recent publications to our reinforcement learning system for traffic control.
- Deploy the system to the real world, investigate and solve sim2real issues.

- Keep up to date with the RL and machine learning literature, share knowledge in a biweekly reading group.

June 2019 - September 2019

G-Research, London – Software Engineering Intern

- Developed and maintained internal software for facilitating trading.

June 2018 - September 2018

PlayFusion, Cambridge – Software Engineering Intern

- Developed an RL agent for purposes of balancing the company's digital trading card game.

Selected Awards

2021	UCL Dean's List	(approx. top 5% of cohort)
2018	Scholar of Gonville and Caius College, Cambridge	(top 25% of cohort)
2017	Netcraft award for top 50 in Computer Science A-Level	(top 0.7% nationwide)

Publications

M. Matthews, M. Samvelyan, J. Parker-Holder, E. Grefenstette, T. Rocktäschel, "Hierarchical Kickstarting for Skill Transfer in Reinforcement Learning" in Conference on Lifelong Learning Agents 2022, <https://arxiv.org/abs/2207.11584>

M. Matthews, M. Samvelyan, J. Parker-Holder, E. Grefenstette, T. Rocktäschel, "SkillHack: A Benchmark for Skill Transfer in Open-Ended Reinforcement Learning", Workshop on Agent Learning in Open-Endedness, ICLR 2022, <https://openreview.net/forum?id=rHSVHmDWI-9>

M. Jackson, S. Malik, **M. Matthews**, Y. Mohamed-Ahmed, "Multi-modal fusion by meta-initialization", FARSCOPE Robotics Conference 2022, Best Poster Award, <https://arxiv.org/abs/2210.04843>

Languages

Proficient

Python (incl. PyTorch, JAX) Java

Less proficient

C# TypeScript Angular SQL C C++ GLSL Poly/ML Prolog