Michael Matthews

Machine Learning PhD Student

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Education

October 2023 - April 2027 (expected)

University of Oxford – DPhil Engineering Science

- Broadly interested in open-endedness and reinforcement learning (RL).
- Supervised by Dr. Jakob Foerster as part of FLAIR.
- Funded by an EPSRC DTP Research Studentship.

September 2020 - September 2021

University College London – MSc Machine Learning

- Supervised by Prof. Tim Rocktäschel and Prof. Edward Grefenstette.
- Worked on skill transfer in RL.
- Distinction (84%).

September 2017 - July 2020

University of Cambridge – BA Computer Science

- Upper second class honours (75%).

Conference Publications

M. Matthews, M. Beukman, B. Ellis, M. Samvelyan, M. Jackson, S. Coward, J. Foerster "Craftax: A Lightning-Fast Benchmark for Open-Ended Reinforcement Learning", *ICML 2024 (Spotlight)*, https://arxiv.org/abs/2402.16801

M. Beukman, S. Coward, **M.Matthews**, M. Fellows, M. Jiang, M. Dennis, J. Foerster, "Refining Minimax Regret for Unsupervised Environment Design", *ICML 2024*, https://arxiv.org/abs/2402.12284

M. Jackson, **M. Matthews**, C. Lu, B. Ellis, S. Whiteson, J. Foerster, "Policy Guided Diffusion", *RLC 2024*, https://arxiv.org/abs/2404.06356

M. Matthews, M. Samvelyan, J. Parker-Holder, E. Grefenstette, T. Rocktäschel, "Hierarchical Kickstarting for Skill Transfer in Reinforcement Learning", *CoLLAs 2022*, https://arxiv.org/abs/2207.11584

Work

October 2021 - June 2023

VivaCity, London – Machine Learning Researcher (Reinforcement Learning Research Team)

- Applied reinforcement learning methods to traffic control.
- Collaborated with the production team to deploy the system to the real world.
- Investigated and solved sim2real issues.
- Kept up to date with the RL and machine learning literature.

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

2024	ICML Spotlight	(top 13% of accepted papers)
2021	UCL Dean's List	(top ~5% of cohort)
2018	Scholar of Gonville and Caius College	(top 25% of cohort)
2017	Award for top 50 in Computer Science A-Level	(top 0.7% nationwide)

Programming Languages

Proficient

Python (JAX, PyTorch)   Java

Familiar

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

Other Interests

Mountaineering/Climbing (CUMC Indoor Meets Secretary 2019/2020), Rowing (Mansfield Boat Club Men's Side Captain 2024/2025), Olympic Weightlifting, Game Development.