# 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.
- 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" in ***ICML 2024***, 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" in ***ICML 2024***, https://arxiv.org/abs/2402.12284

M. Jackson, **M. Matthews**, C. Lu, B. Ellis, S. Whiteson, J. Foerster, "Policy Guided Diffusion" in ***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" in ***CoLLAs 2022***, https://arxiv.org/abs/2207.11584

# Work

October 2021 - June 2023

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

- Experiment with applying reinforcement learning methods to traffic control.
- Collaborate with the production team to deploy the system to the real world
- Investigate and solve sim2real issues.
- Keep 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

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|---|---|---|
| 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) |

# 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