# Matthew T. Jackson

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## Education

University of Oxford — DPhil in Engineering Science *2021-Sept 2025*
Member of the AIMS CDT.
Supervised by Jakob Foerster and Shimon Whiteson.

University College London — MSc in Machine Learning *2020-2021*
Distinction, 87% — Dean's List.
Supervised by Tim Rocktäschel and Edward Grefenstette.

University of Cambridge — BA in Computer Science *2017-2020*
First-Class Honors, 86% — Senior Scholar, ranked 2/99 in cohort.
Highly commended (top 5) dissertation.
Supervised by Pietro Liò.

## Selected Publications

Policy-Guided Diffusion
Matthew T. Jackson, Michael T. Matthews, Cong Lu, Shimon Whiteson, Jakob N. Foerster
*Under Review — NeurIPS 2023 Workshop on Robot Learning* [*link*]

Discovering Temporally-Aware Reinforcement Learning Algorithms
Matthew T. Jackson*, Chris Lu*, Louis Kirsch, Robert T. Lange, Shimon Whiteson, Jakob N. Foerster
*ICLR 2024* [*link*]

Discovering General Reinforcement Learning Algorithms with Adversarial Environment Design
Matthew T. Jackson, Minqi Jiang, Jack Parker-Holder, Risto Vuorio, Chris Lu, Gregory Farquhar, Shimon Whiteson, Jakob N. Foerster
*NeurIPS 2023* [*link*]

## Experience

Wayve — Research Scientist Intern *May-Oct 2024*
Working in the World Models Team on GAIA, Wayve's generative vision-language-action (VLA) model for self-driving.

Amazon — Software Engineering Intern *2020*
Worked in the Alexa Knowledge Group, developing Java software to rank natural language answers to user questions. Implemented features running on all Alexa Q&A queries.

Arm — Software Engineering Intern *2019*
Worked in the Machine Learning Software Group, developing Arm's neural network inference engines in C++. Reviewed deep learning research and added support for new architectures. A selection of contributions may be found on the *ArmNN GitHub*.

Cubica Technology (acquired) — Software Engineering Intern *2018*
Developed a Python script to identify and label reoccurring identities across large-scale video databases. Implemented and trained random forest models for head pose estimation, in addition to a tracking algorithm for video summarization.

## Academia

Tutor
Reinforcement Learning (PhD course), Machine Learning (Master's course)

Reviewer
ICLR, ICML AutoRL workshop, NeurIPS workshops (DeepRL, ALOE, Diffusion Models), DMLR, ACML, Frontiers

## Software

Languages
Python, C++, Java, OCaml, HTML/CSS, Bash

Frameworks
JAX, PyTorch, Hugo

# Further Publications

Craftax: A Lightning-Fast Benchmark for Open-Ended Reinforcement Learning
Michael T. Matthews, Michael Beukman, Benjamin Ellis, Mikayel Samvelyan, Matthew T. Jackson, Samuel Coward, Jakob N. Foerster
*ICML 2024* [*link*]

Near to Mid-term Risks and Opportunities of Open Source Generative AI
Francisco Eiras, Aleksandar Petrov, Bertie Vidgen, Christian Schroeder de Witt, Fabio Pizzati, Katherine Elkins, Supratik Mukhopadhyay, Adel Bibi, Botos Csaba, Fabro Steibel, Fazl Barez, Genevieve Smith, Gianluca Guadagni, Jon Chun, Jordi Cabot, Joseph Marvin Imperial, Juan A. Nolazco-Flores, Lori Landay, Matthew T. Jackson, Paul Rottger, Philip Torr, Trevor Darrell, Yong Suk Lee, Jakob N. Foerster
*ICML 2024* [*link*]

Retrieve What You Need: A Mutual Learning Framework for Open-domain Question Answering
Dingmin Wang, Qiuyuan Huang, Matthew T. Jackson, Jianfeng Gao
*TACL 2024* [*link*]

Online Reinforcement Learning Controllers for Soft Robots using Learned Environments
Uljad Berdica, Matthew T. Jackson, Jakob Foerster, Perla Maiolino
*RoboSoft 2024*

Hypernetworks for Meta-Reinforcement Learning
Jake Beck, Matthew T. Jackson, Risto Vuorio, Shimon Whiteson
*CoRL 2022* [*link*]

Multi-Modal Fusion by Meta-Initialization
Matthew T. Jackson*, Shreshth Malik*, Michael T. Matthews, Yousuf Mohamed-Ahmed
*FARSCOPE Robotics Workshop 2022; Best Poster Award* [*link*]

Addressing Non-Stationarity in Reinforcement Learning by Count Resetting in Adam
Benjamin Ellis*, Matthew T. Jackson*, Andrei Lupu, Alexander D. Goldie, Mattie Fellows, Shimon Whiteson, Jakob N. Foerster
*Under Review*

SplAgger: Split Aggregation for In-Context Reinforcement Learning
Jake Beck, Matthew T. Jackson, Risto Vuorio, Zheng Xiong, Shimon Whiteson
*Under Review* [*link*]

Towards Addressing Non-stationarity, Plasticity Loss, and Exploration via Learned Optimizers for RL
Alexander D. Goldie, Chris Lu, Matthew T. Jackson, Shimon Whiteson, Jakob Nicolaus Foerster
*Under Review*