Matthew T. Jackson

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Summary

My goal is to develop general-purpose agents. During my PhD, I have focused on world models, primarily using diffusion and video data, as well as offline reinforcement learning and meta-learning. I have developed ML systems throughout my career, working as a research scientist on video modeling for robotics and autonomous vehicles, as well as a software engineer on both ML applications and infrastructure. I am currently seeking research scientist roles, starting from January 2026.

Education

University of Oxford – DPhil in Engineering Science — 2021-Jan 2026 (Expected)

Topics: Diffusion, Video Models, Offline and Meta Reinforcement Learning.
Member of the AIMS CDT – supervised by Jakob Foerster and Shimon Whiteson.

University College London – MSc in Machine Learning — 2020-2021

Thesis: Model-Based Task Inference for Meta-Reinforcement Learning
Distinction, 87% – Dean's List.
Supervised by Tim Rocktäschel.

University of Cambridge – BA in Computer Science — 2017-2020

Thesis: Real-Time Video Super-Resolution
First-Class Honors, 86% – Senior Scholar, ranked 2/99 in cohort.
Highly Commended (top 5) Dissertation – supervised by Pietro Liò.

Research Experience

Google DeepMind – Student Researcher — May-Jan 2026

Working in the Open Endedness Team on applications of Genie to robotics.

Wayve – Research Scientist Intern — May-Oct 2024

Worked in the World Models Team around GAIA, Wayve's generative vision-language-action (VLA) model for self-driving. Completed projects on vision transformer interpretability, latent diffusion, offline reinforcement learning, and multimodal video generation.

Selected Publications

A Clean Slate for Offline Reinforcement Learning
Matthew T. Jackson*, Uljad Berdica*, Jarek Liesen*, Shimon Whiteson, Jakob Foerster
NeurIPS 2025 (Oral) [GitHub] [ArXiv]

Token-Sparse Diffusion Transformers
Matthew T. Jackson, Benjamin Ellis, Shimon Whiteson, Jakob Foerster
Under review [ArXiv]

Policy-Guided Diffusion
Matthew T. Jackson, Michael T. Matthews, Cong Lu, Benjamin Ellis, Shimon Whiteson, Jakob Foerster
RLC 2024 [GitHub] [ArXiv]

Jafar: An Open-Source Genie Reimplementation in Jax
Timon Willi*, **Matthew T. Jackson***, Jakob Foerster
ICML 2024 Workshop on Controllable Video Generation [GitHub] [ArXiv]

Adam on Local Time: Addressing Nonstationarity in RL with Relative Adam Timesteps
Benjamin Ellis*, **Matthew T. Jackson***, Andrei Lupu, Alexander D. Goldie, Mattie Fellows, Shimon Whiteson, Jakob Foerster
NeurIPS 2024 [ArXiv]

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

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 Foerster
NeurIPS 2023 [GitHub] [ArXiv]

SWE Experience

Amazon – Software Engineering Intern — Jun-Sept 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 — Jun-Sept 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.

Cubica Technology (acquired) – Software Engineering Intern — Jul-Sept 2018

Developed a Python tool to identify and label reoccurring identities across large-scale video databases. Implemented random forest and tracking methods for video summarization.

Further Publications

2025 [Google Scholar]

Imagined Autocurricula
Ahmet H. Guzel, **Matthew T. Jackson**, Jarek Liesen, Tim Rocktäschel, Jakob N. Foerster, Ilija Bogunovic, Jack Parker-Holder
NeurIPS 2025

Judge a Book by its Cover: Investigating Multi-Modal LLMs for Multi-Page Document Transcription
Benjamin Gutteridge, **Matthew T. Jackson**, Toni Kukurin, Xiaowen Dong
Under review [ArXiv]

An Optimisation Framework for Unsupervised Environment Design
Nathan Monette, Alistair Letcher, Michael Beukman, **Matthew T. Jackson**, Alexander Rutherford, Alexander D. Goldie, Jakob Foerster
RLC 2025 [ArXiv]

2024

Can Learned Optimization Make Reinforcement Learning Less Difficult?
Alexander D. Goldie, Chris Lu, **Matthew T. Jackson**, Shimon Whiteson, Jakob Foerster
NeurIPS 2024 (Spotlight) [ArXiv]

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 Foerster
ICML 2024 (Oral) [ArXiv]

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 Foerster
ICML 2024 (Spotlight) [ArXiv]

SplAgger: Split Aggregation for In-Context Reinforcement Learning
Jake Beck, **Matthew T. Jackson**, Risto Vuorio, Zheng Xiong, Shimon Whiteson
RLC 2024 [ArXiv]

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

Reinforcement Learning Controllers for Soft Robots Using Learned Environments
Uljad Berdica, **Matthew T. Jackson**, Niccolò E. Veronese, Jakob Foerster, Perla Maiolino
RoboSoft 2024 [ArXiv]

2022

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

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