Matthew Jackson

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Education

UNIVERSITY OF OXFORD
DPhil in Machine Learning
2021 – 2025 Oxford, UK
Co-supervised by Shimon Whiteson and Jakob Foerster.

UCL
MSc in Machine Learning
Sep 2021 London, UK
Distinction, 87%.

UNIVERSITY OF CAMBRIDGE
BA in Computer Science
Jul 2020 Cambridge, UK
First-Class Honours, 86%.
Ranked **2/99** in cohort.

Courses

TEACHING
Machine Learning (MSc Eng)
Reinforcement Learning (PhD)

GRADUATE
Approximate Inference
Autonomous Robotics
Deep Learning
Multi-Agent AI
Natural Language Processing
Supervised Learning
Unsupervised Learning

UNDERGRADUATE
Algorithms
Computer Vision
Graphics
Information Theory
Operating Systems

Academic community

REVIEWER
MetaLearn, NeurIPS 2022
Deep RL Workshop, NeurIPS 2022
ACML 2022

PROGRAM COMMITTEE
Deep RL Workshop, NeurIPS 2022

Skills

LANGUAGES
Python • C/C++ • Java • OCaml • Bash

TOOLS
JAX • PyTorch • TensorFlow • SQL • Git

Experience

AMAZON | Software Engineer Intern
Jun 2020 – Sep 2020 Cambridge, UK
- Worked in the Alexa Knowledge group.
- Developed Java software to rank the relevance of natural language answers, running on all Alexa Q&A queries.

ARM | Machine Learning Intern
Jun 2019 – Sep 2019 Cambridge, UK
- Worked in the Machine Learning Software Group on Arm's neural network inference engines (C++).
- Reviewed deep learning research and added support for new operations, optimizing their performance on Arm hardware.

CUBICA TECHNOLOGY | Computer Vision Intern
Jul 2018 – Sep 2018 Woking, UK
- Developed a Python script to identify and label reoccurring identities across databases of security footage, utilising .

Research

Ongoing project on Learned Policy Gradient
M. T. Jackson, J. Foerster
Exploring the impact of environment design on meta-learned objective functions for reinforcement learning.

Hypernetworks for Meta-Reinforcement Learning
J. A. Beck, **M. T. Jackson**, R. Vuorio, S. Whiteson
Conference on Robotic Learning (CoRL), 2022
Proposed a meta-RL agent architecture utilising hypernetworks with a novel meta-initialization method.

Multi-Modal Fusion by Meta-Initialisation
M. T. Jackson*, S. A. Malik*, M. T. Matthews, Y. Mohamed-Ahmed
FARSCOPE Robotics Conference, 2022; ***Best Poster Award***
Proposed a gradient-based meta-learning method for multi-modal few-shot learning, using hypernetworks conditioned on auxiliary task information.

Self-Supervised Meta-Reinforcement Learning
M. T. Jackson, R. Kirk, E. Grefenstette, T. Rocktäschel
MSc thesis; explored the application of self-supervised representation learning to the Alchemy meta-RL benchmark.

Honors

DEAN'S LIST 2020–2021
University College London

SENIOR SCHOLAR
Gonville & Caius College, University of Cambridge

HIGHLY-COMMENDED PART II DISSERTATION
University of Cambridge

DUKE OF EDINBURGH AWARD
Gold, Silver and Bronze levels