Rosco Hunter

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PhD candidate in the AI Systems Lab at the University of Warwick, focusing on Automated Machine Learning, supervised by Dr. Hongkai Wen. Research interests encompass principled approaches to the design and governance of AI. Received a First Class (85%) BSc in Mathematics from the University of Warwick, achieving a first in all 25 assessed modules

Education

University of Warwick   2022 - Present
PhD Candidate in Machine Learning

- Joint first author of Exploiting Network Compressibility and Topology in Zero-Cost NAS, published in the International Conference on Automated Machine Learning, 2023 (26% acceptance rate)

- This received the "Best Paper Award" and was written in collaboration with SAIC (Samsung AI Cambridge) labs

- The paper exploited redundancies in an untrained network's gradients (learning) and activation patterns (representations) to predict its trained performance - achieving state-of-the-art results at zero-cost network ranking

- Current research focuses on improving the latency of foundation models

University of Warwick   2019 - 2022
BSc Mathematics

- First Class Degree (85%), receiving a first in all 25 assessed modules taken whilst at Warwick

- Key Taught Modules: Math of Machine Learning (87%); Applied Dynamical Systems (81%); Bayesian Statistics (88%); Mathematical Biology (81%); Modelling & Numerics (95%); Neural Computing (84%); Advanced Linear Algebra (81%)

- Essay: 'Hopfield Networks and Boltzmann Machines' (81%). This mark was amongst the top in my cohort

Newcastle-under-Lyme School   2017 - 2019

- A-level: 4 A*s (Mathematics, Further Mathematics, Physics, Psychology)

- Top 1000 in UKMT Senior Mathematics Challenge (2018)

Endon High School   2012 - 2017

- GCSE: 10 A*s, 2 As (Self-taught in Further Mathematics – receiving an A* with Distinction)

Technical Experience

Neuroscience Research Intern   2021 - 2023

- Worked under the supervision of Prof. Edmund Rolls of the Oxford Centre of Computational Neuroscience measuring the causal relationships between cortical areas by using a `Hopf Algorithm' composed of noisy coupled oscillators

- This work aided a larger project that studied brain areas ranging from the hippocampus to the anterior cingulate cortex which are important for understanding memory formation and depression, respectively

- Contributions to the explanation and implementation of the Hopf algorithm led to acknowledgments in four papers published in Cerebral Cortex, one paper in Neuroimage, and one paper in Human Brain Mapping

Teaching and Public Engagement

Best Paper Talk at the Hasso Platter Institute   2023

- Presented the Best Paper Talk at the International Conference on Automated Machine Learning to an audience with teams from Google, Meta, Amazon, and other prominent groups

Mathematics Graduate Teaching Assistant   2022 - 2023

- Graded the mathematics assignments of eight first-year students and led bi-weekly small group teaching sessions to offer feedback on their assignments

Online Articles   2023 - Present

- Author concise articles covering subjects from machine learning (i.e., self-critique in LLMs) to contemporary political theory and philosophy (i.e., the vulnerable world hypothesis)

Additional Skills

Programming Languages: Python, MATLAB

Interests: Passion for philosophy, world music, and foreign affairs