Evan Markou

evanmarkou.github.io | evanmarkou | evan-b-markou
evan.markou@anu.edu.au

Education

2023 – 2027 PhD in Machine Learning, **Australian National University**
Supervisors: Prof. Stephen Gould, Dr. Thalaiyasingam Ajanthan, Prof. Marcus Hutter

2020 – 2022 Master of Machine Learning and Computer Vision, **ANU** (GPA: 6.5/7)
Thesis: *Exploring the Robustness of Deep Declarative Networks against Adversarial Attacks*

2014 – 2019 BSc in Computer Science, **Harokopio University, Athens** (GPA: 9.1/10)
Thesis: *Affective Computing with Deep Learning: Towards the road for deep emotion understanding*

2017 Undergraduate Exchange (Erasmus+), **Middlesex University, London**
First class honours, projects on data analysis (on Google Glass OHMDs) and cloud storage architecture.

Work Experience

Research Scientist Intern, Pluralis Research Feb 2026 - Present

Working on frontier decentralised LLM training, with a focus on communication efficiency and theoretical convergence analysis.

Sessional Academic/Tutor, Australian National University Jan 2022 – Present

- Head tutor: Adv. Topics in Deep Learning for Computer Vision (x2); Document Analysis.
- Tutor: Adv. Topics in ML (x2); Computer Vision; Deep Learning; Engineering Data Analytics; Intro to ML; Statistical Machine Learning (x3).
- Responsibilities: Organising and running weekly tutorial/lab sessions (remote & in-person), assignment design and marking, reviewing tutorials, coordinating student research projects.

Research Engineer Intern, BlueScope Steel Aug 2022 – Jan 2023

- Secured an ANU School of Engineering grant for corrosion detection research with BlueScope Steel.
- Designed, trained, and deployed end-to-end computer vision and deep learning models on Microsoft Azure.

Teaching Assistant, Australian National University Jan 2021 – Jun 2022

- Engineering Materials (ENGN3601/6601).
- Managed online course environment (Wattle), lecture video editing, compression, and remote delivery support.

Australia Awards Academic Tutor, Australian National University Sep 2021 – Nov 2021

One-on-one tutorials for DFAT scholars in Intro to Machine Learning (COMP3670/6670). Covered theory, coding practices, and applied ML problem-solving in Python.

Research Assistant, Harokopio University Athens Jan 2019 – Jun 2019

- Developed deep learning architectures for video facial emotion recognition.
- Implemented ETL pipelines for HPC multi-node systems in TensorFlow.

Projects

AI Safety Evaluation Framework for LLMs UK AISI Bounty Grant (£40,000), 2025

Designed an evaluation framework for detecting sandbagging in AI systems. The method was built on algorithmic information theory, applying Kolmogorov complexity as a measure of behavioural simplicity vs. strategic concealment.

AI for Medical Screening ANU Hackathon (2nd Place), 2024

Developed a prototype ML-based medical screening tool. Integrated Kolmogorov complexity as a diagnostic measure to identify irregularities in patient data distributions, improving robustness of detection.

Publications

[1] **Evan Markou**, Thalaiyasingam Ajanthan, Stephen Gould. "Sharper Convergence Rates for Nonconvex Optimisation via Reduction Mappings". In: *The Thirty-ninth Annual Conference on Neural Information Processing Systems*. (Spotlight). 2025.

[2] Daniel Wang, **Evan Markou**, Dylan Campbell. "Towards Scalable Backpropagation-Free Gradient Estimation". In: *Australasian Joint Conference on Artificial Intelligence 2025*. (Best Paper Award). 2025.

[3] **Evan Markou**, Thalaiyasingam Ajanthan, Stephen Gould. "Guiding neural collapse: Optimising towards the nearest simplex equiangular tight frame". In: *Advances in Neural Information Processing Systems* 37 (2024), pp. 35544–35573.

[4] Abhijit Adhikary, Namas Bhandari, **Evan Markou**, Siddharth Sachan. "ArtGAN: artwork restoration using generative adversarial networks". In: *13th International Conference on Advanced Computational Intelligence (ICACI)* (2021), pp. 199–206.

Skills

Programming	Python, C, Java, SQL, PL/SQL, CUDA
Frameworks	PyTorch, TensorFlow, JAX, OpenCV, MATLAB
Optimisation Tools	CVXPY, PuLP, MiniZinc, MOZEK
HPC Systems	MPI, OpenMP, PThreads, Horovod, SLURM
Cloud Platforms	Microsoft Azure
Mathematics	Calculus, linear algebra, probability, statistics, optimisation, analysis, geometry

Honours and Awards

- Australian Government Research Training Program (AGRTP) Scholarship, 2022
- Commonwealth Supported Place (CSP) Scholarship, ANU, 2019
- Valedictorian Award, Harokopio University, 2019

Conferences and Service

- Reviewer: ICICIP 2021, NeurIPS 2025