Benjamin **Sanati**

https://ben-sanati.github.io/ • https://github.com/ben-sanati • https://www.linkedin.com/in/benjamin-sanati/

RESEARCH FOCUS

In deep reinforcement learning, continual learning faces the challenge of the learning plasticity-memory stability trade-off, where agents must balance the ability to learn new tasks with the retention of previously learned knowledge. This often leads to catastrophic forgetting and difficulty achieving robust generalisation. My research addresses this trade-off by developing methods that enable reinforcement learning agents to continually learn and generalise across tasks without sacrificing previously acquired knowledge.

EDUCATION

PhD Machine Learning Systems **09/24 – 09/28**
University of Edinburgh EDINBURGH, UNITED KINGDOM
- Supervisors: **Amos Storkey** (primary) and **David Abel** (secondary)

MEng Electronic Engineering w/ Artificial Intelligence **09/19 – 06/23**
University of Southampton – 1st Class Honours (79%) SOUTHAMPTON, UNITED KINGDOM
- 4th year thesis – Detecting, Mapping, and Verifying Signage with Computer Vision and Machine Learning
- 3rd year thesis – An Investigation Regarding the Leveraging of Class-Granular Classifications

EXPERIENCE

Senior Research Assistant KTA in Machine Learning **03/24 – 07/24**
University of Southampton SOUTHAMPTON, UNITED KINGDOM
- Selected to research a knowledge transfer project with an industry client funded by Innovate UK, focusing on enhancing machine learning applications in railway maintenance
- Responsible for developing a mobile 3D scanning and SLAM system and creating an end-to-end data lake architecture to centralise data, facilitating industry access and enabling revenue generation for the client
- By project completion, I will have authored comprehensive project documentation and delivered presentations detailing technical results and strategic insights to stakeholders and industry professionals

Data Science Intern **07/23 – 09/23**
Cirium, RELX Group LONDON, UNITED KINGDOM
- Awarded a Data Science internship due to my team's performance in an AI hackathon
- Executed time-series forecasting and geospatial analysis using temporal and spatiotemporal machine/deep learning techniques within an agile management framework to steer project success
- Acquired industry experience using AWS Athena, S3, Databricks, Spark, SQL, PyTorch, TensorFlow, Pandas, and NumPy on large-scale, real-world data

Undergraduate Research Scholar **06/22 – 09/22**
University of Southampton SOUTHAMPTON, UNITED KINGDOM
- Conducted research and trained efficient computer vision architectures, specialising in object detection and vision transformers, allowing me to develop proficiency in transfer learning
- Investigated novel sparse temporal sampling modules, reducing compute demands during inference
- Presented project insights to students & academics, showcasing strong presentation capabilities

AWARDS & SCHOLARSHIPS

ESPRC Machine Learning Systems Scholarship 09/2024
Undergraduate Research Scholarship 07/2022

SKILLS

Machine Learning
Python • PyTorch • JAX • SQL • NumPy • Pandas

Tools
AWS • Terraform • Git • Linux • Slurm

Soft Skills
Teamwork • Time Management • Problem Solving

Interests
Entrepreneurship • Football • Tennis • Swimming