

Ben Sanati

PhD Student, University of Edinburgh

-  Edinburgh, UK
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Research Interests

My interests lie in the theoretical foundations of machine learning and probability theory, with a focus on developing principled approaches to learning under uncertainty. My work explores continual learning, bounded rationality, and subjective perspectives on probability and decision theory. I also have a broader interest in epistemology, particularly concerning how beliefs are formed and updated.

Education

- 2024–2028 **Ph.D in Machine Learning Systems**, UNIVERSITY OF EDINBURGH.
Advisors: David Abel, Amos Storkey.
- 2019–2023 **MEng Electronic Engineering with AI**, UNIVERSITY OF SOUTHAMPTON.
First Class Honours
Advisors: Jonathon Hare, Geoff V. Merrett
Thesis: *Improving Inference Efficiency with Dynamic DNNs*
Thesis: *Detecting, Mapping, and Verifying Signage*

Professional Experience

- 03/24–07/24 **Senior Research Assistant**, [project page](#), UNIVERSITY OF SOUTHAMPTON.
 - Sole research associate on a **£25k Innovate UK-funded** industry collaboration.
 - Designed and implemented a mobile 3D SLAM system and end-to-end data lake architecture.
 - Delivered technical findings and research outcomes to industry stakeholders.
- 07/23–09/23 **Data Science Intern**, CIRIUM, RELX GROUP.
 - Awarded a data science internship following **success in a competitive ML hackathon**.
 - Delivered spatio-temporal ML models for large-scale aviation forecasting tasks.
- 06/22–09/22 **Undergraduate Research Scholar**, UNIVERSITY OF SOUTHAMPTON.
 - Awarded a **£5k research scholarship** for academic excellence by a faculty scholarship panel.
 - Investigated computationally efficient computer-vision methods for object detection.
 - Presented research findings to students and faculty members.

Awards

- 2024 EPSRC Machine Learning Systems Scholarship
- 2022 Undergraduate Research Scholarship

Publications

Forgetting is Everywhere

Ben Sanati, Thomas L. Lee, Trevor McInroe, Aidan Scannell, Nikolay Malkin, David Abel, Amos Storkey. [arXiv preprint](#).

Reviews, Talks and Outreach

- Reviews 2025: Finding the Frame, RLC.
- Talks 2025: The fundamental problem of forgetting. *ANC Workshop, University of Edinburgh*.
- Further Development 2026: Mathematical Foundations of Probabilistic AI. *ProbAI Hub Winter School, University of Warwick*.