

Harris Abdul Majid

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EDUCATION

The University of Edinburgh

Sept. 2022 – Aug. 2026

PhD Machine Learning

Edinburgh, Scotland

- Thesis: *Unlocking New Capabilities in Machine Learning for the Physical Sciences*. In this thesis, we take a unique perspective: physics is a computer vision problem; and focus on enabling new capabilities for the physical sciences. Contributions include *Ambient Physics*, a framework to learn the true data distribution directly from corrupted data (without needing a single clean example); and *RecurrNets*, a framework to enable test-time accuracy-cost trade-off with anytime prediction and built-in error estimation.
- Teaching: Engineering Mathematics 2B ('22-23). Supervision: *Physics-Informed Neural Operators vs. Classical Solvers* (Hounat, '22-23); *Robustness of Neural Operators* (Stratford, '24-25); *Local Weather Forecasting* (Yu, '24-25).

The University of Edinburgh

Sept. 2020 – Aug. 2021

MSc Computational Applied Mathematics (with Distinction)

Edinburgh, Scotland

- Thesis: *Classification of High-Dimensional Data using Graph-Based Semi-Supervised Learning*.

University of York

Sept. 2016 – Jul. 2020

BSc Mathematics (with Honours)

York, England

EXPERIENCE

The University of Edinburgh (with NatWest Group)

Sept. 2021 – Apr. 2022

Research Assistant

Edinburgh, Scotland

- Built end-to-end data pipelines over 5M anonymized NatWest Group accounts (100M+ data points) to model financial vulnerability and its associated risks across the UK population.
- Delivered policy recommendations to the UK Government and the Department for Work and Pensions.

Technical University of Denmark

Jun. 2018 – Sept. 2018

Research Assistant

Kongens Lyngby, Denmark

- Modeled the structural dynamics of wind turbine towers by numerically solving the fourth-order dynamic beam equation (PDE) across varied initial and boundary conditions in MATLAB.

SELECTED PUBLICATIONS

1. *Ambient Physics: Training Neural PDE Solvers with Partial Observations*.
Harris Abdul Majid, Giannis Daras, Francesco Tudisco, Steven McDonagh.
ICML 2026 Workshop on AI for Physics [\[arXiv\]](#).
2. *Test-Time Accuracy-Cost Control in Neural Physics Simulators via Recurrent Depth*.
Harris Abdul Majid, Pietro Sittoni, Francesco Tudisco.
ICLR 2026 Conference Paper [\[project page\]](#).

SKILLS

- **Programming:** Python; C++.
- **Scientific Computing:** NumPy; SciPy; CuPy; Pandas.
- **Machine Learning:** PyTorch; TensorFlow.
- **Distributed Training:** Hugging Face Accelerate; Megatron-LM; NVIDIA Transformer Engine.
- **Infrastructure:** Git; Docker; Kubernetes; Mixed Precision (BF16/FP8).
- **Languages:** English (Native); Arabic (Fluent).

GRANTS

1. **Modal Research Grant, \$10,000.** Dec. 2025
Project: *Ambient Physics: Training Neural PDE Solvers with Partial Observations.*
2. **Modal Research Grant, \$2,000.** Sept. 2025
Project: *Test-Time Accuracy-Cost Control in Neural Physics Simulators via Recurrent Depth.*

INVITED TALKS

1. **Brookhaven National Laboratory.** Jun. 2026
Talk: *Unlocking New Capabilities in Machine Learning for the Physical Sciences.*
2. **SciCADE 2026: Scientific Computing and Differential Equations Conference.** Jun. 2026
Talk: *Learning Physics Directly From Corrupted Data.*

PUBLICATIONS

1. *Physics is Vision.*
Harris Abdul Majid.
In Submission.
2. *Beyond 3 Million Tokens: A Multi-Modal Foundation Model for Full-Resolution Heliophysics.*
Sujit Roy, Johannes Schmude, Ata Akbari Asanjan, Thorsten Kurth, Rohit Lal, Kshitiz Mandal, Vishal Gaur,
Harris Abdul Majid, Nikolaos Dionelis, Berkay Aydin, Himanshu Patil, Andres Munoz-Jaramillo,
Campbell D Watson, Juan Bernabe Moreno, Manil Maskey, Rahul Ramachandran.
In Submission.
3. *Ambient Physics: Training Neural PDE Solvers with Partial Observations.*
Harris Abdul Majid, Giannis Daras, Francesco Tudisco, Steven McDonagh.
ICML 2026 Workshop on AI for Physics [\[arXiv\]](#).
4. *Test-Time Accuracy-Cost Control in Neural Physics Simulators via Recurrent Depth.*
Harris Abdul Majid, Pietro Sittoni, Francesco Tudisco.
ICLR 2026 Conference Paper [\[project page\]](#).
5. *Solaris: A Foundation Model for the Sun.*
Harris Abdul Majid, Pietro Sittoni, Francesco Tudisco.
NeurIPS 2024 Workshop on Foundation Models for Science.
6. *Mixture of Neural Operators: Incorporating Historical Information for Longer Rollouts.*
Harris Abdul Majid, Francesco Tudisco.
ICLR 2024 Workshop on AI for Differential Equations in Science.

AWARDS AND LEADERSHIP

- **Anthropic Claude Ambassador.** Sept. 2025 – Apr. 2026
- **ML4DE Hackathon at the University of Cambridge.** Apr. 2026
First Place. Challenge: *Machine Learning for Differential Equations and Optimal Control.*
- **ML4DE Hackathon at the University of Cambridge.** Apr. 2025
First Place. Challenge: *Accurate Simulation of Solution Trajectories.*
- **Generative Modeling Hackathon at The University of Edinburgh.** Jul. 2024
First Place. Challenge: *Hallucinations in Large Vision-Language Models.*