

Cristiana Diaconu

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EDUCATION

Machine Learning Group, University of Cambridge PhD in Machine Learning Supervised by Prof. Richard Turner , Advised by Prof. José Miguel Hernández Lobato	2023 - Present
MEng in Information Engineering and Bioengineering, University of Cambridge Part IIB Engineering <i>Distinction</i> 83% - top of the Part IIB order of merit, Part IIA 89%	2019-2021
BA Hons Natural Sciences - Physics and Materials Science Part IB <i>First Class Honours (I)</i> - 79%, Part IA <i>Upper Second Class (II.1)</i> - 69%	2017-2019

PUBLICATIONS AND SELECT PREPRINTS

Estimating Interventional Distributions with Uncertain Causal Graphs through Meta-Learning

The Thirty-Ninth Annual Conference on Neural Information Processing Systems (NeurIPS), 2025
Anish Dhir*, **Cristiana Diaconu***, Valentinian Mihai Lungu, Richard E. Turner, Mark van der Wilk

Gridded Transformer Neural Processes for Large Unstructured Spatio-Temporal Data

Spotlight poster (top 2.6%) at the International Conference on Machine Learning (ICML), 2025
Matthew Ashman*, **Cristiana Diaconu***, Eric Langezaal*, Adrian Weller, Richard E. Turner

On Conditional Diffusion Models for PDE Simulations

The Thirty-Eighth Annual Conference on Neural Information Processing Systems (NeurIPS), 2024
Aliaksandra Shysheya*, **Cristiana Diaconu***, Federico Bergamin*, Paris Perdikaris, José Miguel Hernández-Lobato, Richard E. Turner, Emile Mathieu

Approximately Equivariant Neural Processes

The Thirty-eighth Annual Conference on Neural Information Processing Systems (NeurIPS), 2024
Matthew Ashman*, **Cristiana Diaconu***, Adrian Weller, Wessel P. Bruinsma, Richard E. Turner

Translation Equivariant Transformer Neural Processes

International Conference on Machine Learning (ICML), 2024
Matthew Ashman, **Cristiana Diaconu**, Junhyuck Kim, Lakee Sivaraya, Stratis Markou, James Requeima, Wessel P. Bruinsma, Richard E. Turner

In-Context In-Context Learning with Transformer Neural Processes

Proceedings of the 6th Symposium on Advances in Approximate Bayesian Inference, 2024
Matthew Ashman*, **Cristiana Diaconu***, Adrian Weller, Richard E. Turner

Guided Autoregressive Diffusion Models with Applications to PDE Simulation

AI4DiffEqtnsInSci Workshop at International Conference on Learning Representations (ICLR), 2024
Federico Bergamin*, **Cristiana Diaconu***, Aliaksandra Shysheya*, Paris Perdikaris, José Miguel Hernández Lobato, Richard E. Turner, Emile Mathieu

Denoising Diffusion Probabilistic Models in Six Simple Steps

Richard E. Turner, **Cristiana Diaconu**, Stratis Markou, Aliaksandra Shysheya, Andrew Y. K. Foond, Bruno Mlodozeniec

WORK EXPERIENCE

Research Intern at Polymathic AI	2025 - present
<ul style="list-style-type: none">Developing a method to fine-tune a foundational deterministic PDE model into a probabilistic one.Improving the stability of long rollouts of the PDE foundation model developed by Polymathic AI.	
Researcher Intern at Microsoft Research AI4Science	2025
<ul style="list-style-type: none">Improving conditional generation abilities of generative model for inorganic materials, and optimising diffusion model choices for improved performance.Integrating models into the existing codebase following best software engineering practices.	

Data Scientist/Machine Learning Engineer at L2S2

2021 - 2023

- Analysed and developed machine learning models on big medical data sets (1M+ datapoints); examples include predicting the mortality risk of patients using Hospital Episode Statistics (HES) data, investigating the risk of deterioration of elderly people by analysing vital signs data.
- Developed an automatic pupil detection algorithm using the **OpenCV** library in **Python**.
- Developed an emergency department simulator using a discrete event simulator (**Simpy** in **Python**).
- Worked on the data development of the National Emergency Care Data Set (ECDS) Max.

Data Analyst Summer Intern at Intropic

2020

- Performed an event study that analysed the impact of Passive Fund demand and supply, and proposed a simple long-short strategy based on the findings.
- Cleaned and processed the 4-year historical dataset on which the event study was performed; was responsible for the final version of the dataset that was shared with the clients.

ADDITIONAL PROJECTS

High quality IT system for emergency care in developing countries

2023-2024

- Contributed to an open-source, **Django**-based application that can be used to provide emergency care in clinics/hospitals with limited technological resources (e.g. from developing countries).

Cuff-less Blood Pressure Estimation

2020-2021

- Worked with a 2.4TB database to develop a combination of physical and machine learning-based models, with the aim to perform non-invasive cuff-less estimation of the arterial blood pressure.

ACADEMIC ACTIVITIES

Reviewer at NeurIPS, ICLR, ICML, UAI

2025

Admissions Interviewer for Undergraduate Engineering, Queens' College, Cambridge

2023, 2024

Project Supervisor, University of Cambridge

2023-Present

- Co-supervised the projects of three fourth-year Engineering students, and of one student completing an MPhil in Machine Learning and Machine Intelligence.

Undergraduate Supervisor, University of Cambridge

2023-Present

Lab Demonstrator for the Lego Mindstorms exercise, University of Cambridge

2023-Present

Private Tutor

2019-Present

- STEM subjects for pupils studying for final-year examinations and university level examinations.

SCHOLARSHIPS AND AWARDS

Cambridge Trust Scholarship

2023-2027

Awarded a full scholarship for a PhD in Machine Learning.

The Institution of Civil Engineering Baker Prize

2021

Awarded for being the **highest candidate in the combined order of merit** in the Part IIB examinations from the Engineering Tripos.

The Ruth Hendry Prize

2021

Awarded by Queens' College for outstanding distinction in examinations by a fourth year undergraduate.

The James & Jean Bennett Prize

2021

Awarded by Queens' College for distinction in Engineering.

Foundation Scholarship

2020

Awarded in recognition of obtaining a First in the fourth-year examinations.

The Prigmore Prize

2020

Awarded by Queens' College for distinction in Engineering.

Prizes and Medals at the Romanian Physics National Olympiad

2014-2017

Silver Medal at the European Union Science Olympiad, Klagenfurt, Austria

2015

SKILLS

Computing - Python, MATLAB, PyTorch, Tensorflow, Django, LaTeX

Language - Romanian: Mother Tongue, English: Fluent, Spanish: Advanced, German: Basic