

Fengzhe Zhang

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EDUCATION

Gatsby Computational Neuroscience Unit, UCL

PhD in Machine Learning and Computational Neuroscience

London, UK

October 2026 - September 2030

Advisor: Prof. Arthur Gretton. Awarded a fully funded Jump Trading studentship, featuring a concurrent industry partnership dedicating two days per week to applied research at Jump Trading.

University of Cambridge

MPhil Machine Learning and Machine Intelligence

Cambridge, UK

October 2023 - September 2024

Achieved a score of 79.87% (Distinction), ranking in the top 10% (4th out of 36 students)

Imperial College London

BSc Mathematics

London, UK

October 2020 - June 2023

Achieved a score of 88.41% (First Class Honours), ranking in the top 4% (10th out of 251 students)

PUBLICATIONS

Fengzhe Zhang, Laurence I. Midgley, and José Miguel Hernández-Lobato. “Efficient and Unbiased Sampling from Boltzmann Distributions via Variance-Tuned Diffusion Models.” *Accepted by TMLR*, 2025. Received **J2C Certification** (top 10% of accepted papers); **Eligible for poster presentation at ICML 2026**.

Fengzhe Zhang*, Jiajun He*, Laurence I. Midgley, Javier Antorán, and José Miguel Hernández-Lobato. “Efficient and Unbiased Sampling of Boltzmann Distributions via Consistency Models.” *Machine Learning and the Physical Sciences (MLPS) Workshop @ NeurIPS*, 2024. (*Equal Contribution)

Fengzhe Zhang. “Sampling of Molecular Energy Functions via Consistency Models.” *MPhil Dissertation, University of Cambridge*, 2024.

RESEARCH EXPERIENCE

Research Assistant

Supervisor: Prof. José Miguel Hernández-Lobato

University of Cambridge

October 2024 – November 2025

Developing and applying deep generative models—such as diffusion models and normalizing flows—to accelerate molecular generation and improve sampling accuracy.

MPhil Dissertation

Supervisor: Prof. José Miguel Hernández-Lobato

University of Cambridge

April 2024 – August 2024

Created a Consistency-Model + importance-sampling framework that yields unbiased samples from molecular energy functions and being $\approx 4\times$ faster than DDPM baselines; dissertation awarded Distinction.

Undergraduate Research Assistant

Supervisor: Dr Yingzhen Li

Imperial College London

July 2023 – October 2023

Proposed and experimented a novel algorithm to directly regulate KL divergence during VAE training, eliminating β -VAE hyper-parameter sweeps and generalising to multiple VAE architectures.

Undergraduate Group Project

Supervisor: Dr Sheehan Olver

Imperial College London

May 2022 - June 2022

Developed a deflation-based method to uncover multiple solutions of nonlinear ODE/PDE systems from a single initial guess; project won the Winton Prize for best Mathematics group project.

TEACHING EXPERIENCE

Peer Tutor and Teaching Assistant, Imperial College London

October 2022 – April 2023

- Led first-year tutorials in Probability, Analysis, and Calculus and supported second-year Numerical Analysis with Julia, strengthening students’ advanced problem-solving and computational skills.

SCHOLARSHIPS & AWARDS

Dean’s List - Recognized among the top 10% of students.

2021 & 2022 & 2023

Undergraduate Research Bursary - Awarded by the Mathematics Department

2022

The Winton Prize – Outstanding undergraduate 2nd-year group project prize in Mathematics.

2022