Max Hird BA (Oxon.) MSc MPhil PhD DipABRSM

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Professional Preparation

Oxford University (Lincoln College) - Mathematics, BA (2:1) - 2016

University College London - Statistics, MSc (Distinction, Project Prize) - 2020

Thesis titled `An Introduction to Adaptive Markov Chain Monte Carlo', supervised by Dr. Samuel Livingstone

University College London - Stochastic Computation, PhD - 2025

Thesis titled `Beyond Canonical MCMC: Preconditioning, Adaptivity, and Variational Approximations', supervised by Dr. Samuel Livingstone

Professional and Academic Appointments

Postdoctoral Scholar, University of Waterloo   01/10/25 - 30/09/2026

Supervised by Jeffrey Negrea

Consultant Statistician, The Convergence Group   01/12/23 - Present

Consultant Statistician, AIXO   15/02/23 - 15/06/23

Publications, Preprints, and Working Papers

Quantifying the effectiveness of linear preconditioning in Markov chain Monte Carlo
Hird, M. and Livingstone, S. (2025) - Journal of Machine Learning Research 26: 1-51

The Occlusion Process: improving sampler performance with parallel computation and variational approximation
Hird, M. and Maire, F. (2024) - In submission to the Journal of Machine Learning Research

Improving the convergence of Markov chains via permutations and projections
Choi, M.C.H. and Hird, M. and Wang, Y. (2025) - Random Structures and Algorithms 66

A fresh take on `Barker dynamics' for MCMC
Hird, M., Livingstone, S., and Zanella G (2020) - Proceedings of MCQMC 2020

Lightweight Adaptive MCMC for High-Dimensional Highly Correlated Distributions
Hird, M., Livingstone, S. - In Preparation

Preconditioning for MCMC: Concepts, Practices, and Challenges
Hird, M., Power, S. - In Preparation

Non-asymptotic Guarantees for Adaptive MCMC under a Wasserstein Contraction
Hird, M., Negrea, J., Maire, F. - In Preparation

Students

Pratyusha Sarkar - Undergraduate Project - Boosting MCMC efficiency with leading eigeninformation

Rui Zhang - Undergraduate Project - Markov processes and Markov chain Monte Carlo
Co-supervised with Sam Livingstone

Teaching

STAT0023 - Introduction to Practical Statistics (UCL Department of Statistical Science) - 2nd Term 2021-2022

Awards

Poster Prize - Bayesian Young Statisticians Meeting 2024

Deepti Jarawardena Wilkinson Award for Service - Awarded for services to the Department of Statistics at UCL

Poster Prize - London Wide Poster Day

Grants

UK-Canada Globalink doctoral exchange scheme - funded by UKRI and Mitacs - *£15,000 + 3,000 CAD*

Departmental Travel Grant to Monte Carlo and Quasi Monte Carlo Methods 2024 - *c. £1,500*

Fully-funded 4 year Engineering and Physical Sciences Research Council PhD Scholarship - *c. £70,000 + tuition*

Reviewing

Reviewer for AISTATS 2024, AISTATS 2025, UAI 2025, Statistics and Probability Letters, Journal of Computational and Graphical Statistics

Conferences, Seminars, and Reading Groups

I founded and organised the Foundations and Landmarks reading group along with Kevin Han Huang and Hugh Dance for three consecutive years. We had a website.

Skills

R, C++, Python, LaTeX