CHRISTIAN HURRY
MPhys, MSc, PhD

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Profile

I am an AI/ML engineer working in the biomedical sector with an academic background in mathematical modelling and simulation of biological systems. Following my doctoral studies, I have been working for a major biopharma developing deep learning with both preclinical and clinical data. I have expertise in multi-modal integration, leveraging large unlabelled datasets with self-supervised learning, and building models which are robust to missing features and modalities.

Qualifications

King's College London — 2018-2023 — PhD in Applied Mathematics
- Statistical mechanics of immunity from genes to populations. Supervised by Alessia Annibale. Interdisciplinary PhD - theoretical physics applied to biological systems.

King's College London — 2017-2018 — MSc in Non-Equilibrium Systems (Distinction)
- Syllabus included Statistical Learning, Simulation of Biomolecules, Non-equilibrium Statistical Mechanics, Mathematical Biology, Rare Events and Large Deviations.

The University of Manchester — 2013–2017 — MPhys in Physics (First Class)
- Including modules in Advanced Statistical Physics, Gravitation, Electrodynamics, Computational Physics and Quantum Mechanics.

Secondary Education — 2006–2013
- Maths (A*), Further Maths (A), Physics (A), History (A) at A2 level. 7 A*s and 4 As at GCSE level.

Publications

- **Out-of-distribution evaluations of channel agnostic masked autoencoders in fluorescence microscopy** CJ Hurry, J Zhang, O Ishola, E Slade, CQ Nguyen, In Learning Meaningful Representations of Life Workshop at ICLR 2025, 2025

- **Self-supervised learning of multi-omics embeddings in the low-label, high-data regime** CJ Hurry, E Slade, arXiv preprint, 2023

- **Dynamics of sparse Boolean networks with multi-node and self-interactions,** CJ Hurry, A Mozeika, A Annibale, Journal of Physics A, 2022

- **Vaccination with partial transmission and social distancing on contact networks**, CJ Hurry, A Mozeika, A Annibale, *Journal of Statistical Mechanics*, 2022

- **A precision dosing application for patients treated with docetaxel and G-CSF**, CJ Hurry, C Villette, H Mistry, J Millen, C Chassagnole, *Proceedings of the American Association for Cancer Research Annual Meeting,* 2021

- **Modelling the interplay between the CD4+/CD8+ T-cell ratio and the expression of MHC-I in tumours**, CJ Hurry, A Mozeika, A Annibale, *Journal of Mathematical Biology,* 2021

Relevant Experience + Skills

AI/ML Engineer, GSK — 2024-Present
- Produced AI/ML solutions for drug discovery pipeline in both clinical and preclinical settings
- Research in computer vision for fluorescence microscopy, and deep learning with scRNA-seq for modelling respiratory diseases
- Contributed to wider ML community. Top reviewer for NeurIPS 2024, reviewer for ICML and NeurIPS 2025

AI/ML Fellow, GSK — 2022-2024

- 2 year post-doctoral fellowship with GSK
- Research focussed on self-supervised learning for omics data, with an emphasis on multi-modal integration and robustness to missing data and missing modalities resulting in early promotion to full-time engineer

PhD Student, King's College London — 2018–2023

- Inter-disciplinary research combining applied mathematics, physics, immunology and epidemiology.
- Developed skills in reading literature from fields outside my background, identifying pertinent information.
- Expertise in mathematical modelling, numerical methods and simulation of systems.
- Confident public speaker, with experience and skill in explaining research. Winner of the 2019 'Three Minute Thesis' KCL competition and semi-finalist in the national TMT competition.
- Selected to present research at the Houses of Parliament for the 'STEM For Britain' poster competition.

Intern Scientist, Personalised Oncology Project, Physiomics — 2020

- Project developing a precision dosing tool for chemotherapy patients
- Developed Bayesian framework assessing individual impact of chemotherapy to inform dosing decisions

Graduate Teaching Assistant at King's College London — 2019-2020

- Independently prepared and led weekly, hour-long tutorial sessions to supplement lectures at both undergraduate and postgraduate level.
- Nominated by students for "Outstanding Teaching Assistant 2019/2020".

Lead organiser of the Quantitative Systems Biology Workshop — 2019

- Hosted expert speakers from the U.K and Europe and 60+ attendees for 2 day workshop
- Won over £1900 in event funding from the Francis Crick Institute. Negotiated and secured £500 in corporate sponsorship.

MSc Student, King's College London — 2017–2018

- Carried out three independent research projects on short timescales.
- Chaotic dynamics in neural networks with different connectivity and modularity in network structure
- Changepoint detection in EEG data. Practical application of recent changepoint detection methods, including hidden Markov models.
- Molecular dynamics simulations of biomolecules.

MPhys Student, University of Manchester — 2016–2017

- Year-long project with the aim of improving precision in MRI measurements of water exchange in the brain.
- Data-driven research - experience in model choice and parameter estimation in imaging science.
- Used statistical inference software (STAN) to apply spatial constraints in MRI data via prior distributions.

Study Abroad, University of Toronto — Sept 2015–June 2016

- Nominated after competitive application process to study abroad in Toronto.

Computational Skills

- Highly experienced Python user with emphasis on scientific computing and object oriented programming
- PyTorch, NumPy, SciPy, scikit-learn, Pandas
- Practical experience with high performance computing clusters and version control with git.

Personal Interests

In my spare time, I study acoustic guitar, see and perform live comedy, and read as many different books as I can.

References provided upon request