

LUKE HARDCASTLE

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EDUCATION

University College London *September 2021 - Present*

PhD in Statistical Science (ongoing)

Title: *Bayesian computation for survival models in Health Economics*

Supervisors: Dr Samuel Livingstone & Prof. Gianluca Baio

University College London *September 2020 - 2021*

MSc in Statistics, Distinction

Sessional prize on the basis of excellent overall performance

Project prize on the basis of excellent performance

University of Warwick *September 2015-2018*

BSc (Hons) in Mathematics and Statistics, First Class

EXPERIENCE

Alan Turing Institute *September 2023 - July 2024*

Visiting PhD student

- Engaging with talks and projects within the Transformation of Health theme. Established regular Computational Biostatistics reading group.

Parexel *December 2022 - September 2023*

Advanced Analytics Associate - Intern

- Conducted statistical modelling to support health economic analysis for submission to national regulatory body. Supported the advanced analytics team with literature reviews and reports on novel survival analysis methodology.

University College London *January 2022 - present*

Teaching Assistant

- Tutorial leader for STAT0002 (Introduction to Probability and Statistics), Demonstrator for STAT0023 (Computing for practical statistics), marker for STAT0002, STAT0025 (Optimisation Algorithms in Operational Research) and STAT0030 (Statistical Computing).

Meningitis Research Foundation *March 2019 - December 2020*

Events Fundraiser

- Senior member of a team responsible for 10-20% of the charity's annual income. Part of the core team retained during the COVID-19 pandemic in March 2020.

University of Warwick *September 2018 - December 2018*

Teaching Assistant

- Tutorial leading and marking for introductory module on mathematical techniques (ST116).

University of Warwick *July 2017 - August 2017*

Research Assistant

- Statistical analysis and data manipulation of large genomics datasets as part of the Midlands Integrative Biosciences Training Partnership - Research Experience Placement in the Hebenstreit lab.

PUBLICATIONS

- **Hardcastle, L.**, Livingstone, S., Black, C., Ricciardi, F., & Baio, G. (2022). *A Bayesian hierarchical model for improving exercise rehabilitation in mechanically ventilated ICU patients*. arXiv preprint arXiv:2206.14047. (Minor revisions)

WORKS IN PROGRESS

- **Hardcastle, L.**, Livingstone, S., & Baio, G. *Piecewise Deterministic Monte Carlo for Bayesian Model Averaging in Polyhazard models*. (Work in progress)

AWARDS

Enrichment Scheme award, Alan Turing Institute	September 2023
Poster prize winner, Bayescomp 2023	March 2023
Book prize winner, UCL Departmental poster session	October 2022
PhD Studentship, UCL/EPSRC IMSS Doctoral Training Programme	September 2021
Sessional prize for excellent overall performance (MSc), UCL Statistical Science	September 2021
Project prize for excellent performance (MSc), UCL Statistical Science	September 2021
MIBTP, BBSRC - Research Experience Placement, University of Warwick	July 2017

TALKS & POSTERS

- **Poster:** *Bayesian model averaging for polyhazard models using Piecewise Deterministic Markov Processes*, **2024 ISBA world meeting**, Venice, Italy (Upcoming) July 2024
- **Talk:** *Bayesian model averaging for polyhazard models using Piecewise Deterministic Markov Processes*, UCL PRIMENT seminar, London, UK (Upcoming) March 2024
- **Talk:** *Bayesian model averaging for polyhazard models using Piecewise Deterministic Markov Processes*, UCL Statistical Science PhD seminar, London, UK November 2023
- **Long talk:** *Bayesian model averaging for polyhazard models using Piecewise Deterministic Markov Processes*, **Bayesian Young Statisticians Meeting (j-ISBA)**, Online November 2023
- **Contributed talk:** *Piecewise Deterministic Monte Carlo for model selection in polyhazard models*, **Greek Stochastics ν** , Naxos, Greece July 2023
- **Poster:** *Markov Chain Monte Carlo for automatic model selection in polyhazard models*, EPSRC visit to UCL Mathematical and Statistical Sciences May 2023
- **Poster:** *Markov Chain Monte Carlo for automatic model selection in polyhazard models*, **Bayescomp 2023**, Levi, Finland, **Poster prize winner** March 2023
- **Poster:** *MCMC for automatic model selection in polyhazard models*, UCL Statistical Science Departmental Poster session, **Book prize winner** October 2022
- **Poster:** *A Bayesian hierarchical model for improving exercise rehabilitation in mechanically ventilated ICU patients*, **International Workshop on Statistical Modelling (IWSM) 2022**, Trieste, Italy July 2022
- **Talk:** *A Bayesian hierarchical model for improving exercise rehabilitation in mechanically ventilated ICU patients*, UCL CHIMERA regular meetings, Online November 2021

ADDITIONAL INFORMATION

- I have developed outreach talks based on the topic of Bayesian inference and presented these talks at UCL Statistical Science undergraduate open days.
- I am currently running a reading group on computational biostatistics at the Alan Turing Institute. I have also attended and presented at reading groups on the topics of convex optimisation and optimal transport.