Joshua Corneck

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Introduction

I am a final-year PhD student at Imperial College London and the University of Oxford, funded through the EPSRC Centre for Doctoral Training in Statistics and Machine Learning (StatML CDT).

Education

PhD | ***Modern Statistics and Statistical Machine Learning*** 2023 – Present
Imperial College London & University of Oxford United Kingdom

- My research focuses on the statistical analysis of dynamic network-valued data, with a particular emphasis on network point processes. I develop methodology and supporting theory for clustering and community detection under a range of modelling assumptions, with an emphasis on scalable inference and rigorous guarantees. I have applied this work to diverse settings, including bike-sharing networks, global food trade networks, and air-traffic data.
- **Visiting appointments:** *Sandia National Laboratories, Albuquerque, New Mexico, USA.* I undertook a three-month research placement at Sandia National Laboratories, researching into the use of network models with Bayesian non-parametric approaches to detect latent structure among global terror groups.

Master of Science | ***Statistics*** 2020 – 2021
Imperial College London United Kingdom

Bachelor of Arts | ***Mathematics*** 2016 – 2019
University of Cambridge United Kingdom

Journal articles and conference proceedings

- **Corneck, J.**, Cohen, E. A. K., Martin, J. S., and Sanna Passino, F. (2025). *Online Bayesian changepoint detection for network Poisson processes with community structure*. Statistics and Computing, 35(75) (paper).
- **Corneck, J.**, Cohen, E. A. K., Martin, J., Patel, L., Shuler, K. W., and Sanna Passino, F. (2026), Simultaneous global and local clustering in multiplex networks with covariate information, Journal of Complex Networks 14(1) (paper).

Preprints

- **Corneck, J.**, Cohen, E. A. K., and Sanna Passino, F. (2026) *Spectral embedding of inhomogeneous Poisson processes on multiplex graphs* (arxiv)
- Moutonnet, N., **Corneck, J**., Tobar, F., and Mandic, D. (2026), *Synthesizing epileptic seizures: Gaussian processes for EEG generation* (arxiv)

Work Experience

Quantitative Research Intern October 2025 – January 2026
iSAM United Kingdom

- Collaborated with quantitative researchers on the iSAM Helix team to develop their risk model.

Data Scientist September 2021 – September 2022
Angstrom Sports United Kingdom

- Developed ML models to forecast team and player-level statistics for the "Big 5" American sports.
- Machine learning models built using R, Python and C#.
- Database management in MYSQL.

Mathematics Teacher September 2019 – July 2020
Dartford Grammar School United Kingdom

- Full-time Mathematics and PE teacher for students aged 13 - 18.

Corporate Capital Markets Intern July 2018 – September 2018
JLL United Kingdom

- Worked along senior analysts, helping to construct financial models.

Teaching Experience

Graduate Teaching Assistant September 2022 – Present
Imperial College London United Kingdom

- I have taught on a number of university courses, for instance:
- Machine Learning (MSc)
- Applied Statistics (MSc)
- Exploratory Data Analysis and Visualisation (MSc)

Other activities

Awards:

- Winner of the Winton MSc in Statistics Data Challenge, Imperial College London: Won a financial prediction hackathon as part of a team, competing against other MSc Statistics students, August 2021.

Invited talks:

- NeST, Bayesian online changepoint detection, October 2024.
- Sandia National Laboratories, Bayesian online changepoint detection, June 2024.

Skills:

- **Programming**: Python (advanced), R (advanced), MATLAB (basic), MySQL (basic)
- **Personal Trainer**: NASM Level 3 Personal Trainer