Matthew Knowles

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Education

University of Sheffield Sheffield, UK

MSc, Statistics with Medical Applications, Grade: Merit *September 2022 – September 2024*

- Studied part time while working at OPEN Health
- Modules in time series, bayesian statistics, medical statistics, machine learning and economic modelling
- Disseration: A Network Meta-Analysis of Treatments of Locally Advanced/Metastatic Pancreatic Cancer (75%)

University of York York, UK

MMath (Hons), Mathematics, Grade: 2:1 *October 2018 – June 2022*

- Specialised in statistics and financial mathematics in year 4. Focused on pure mathematics and statistics in years 1-3
- Key modules included statistical pattern recognition, applied data science in R, and bayesian statistics
- Third year project: On Differential Equations in in-host Viral Pathology (70%)
- Dissertation: Statistical Methods for Resetting Score Targets in Limited-Overs Cricket (72%)
- Recived full colours for representing the university at cricket

Experience

Statistical Scientist December 2024 – Present

Astellas Pharma *York, UK*

- Trial statistician in the oncology group, working on two novel compounds
- Responsible for informing wider compound team about statistical considerations
- Developed an automated R pipeline for creating weekly outputs of key trial endpoints
- Co-lead a research group on indirect treatment-comparisons

Senior Statistical Analyst April 2024 – November 2024

OPEN Health Evidence and Access *London, UK*

- Lead the survival analysis workstream update for a large clinical trial in chronic-lympochytic leukemia
- Supported the delivery of a network meta analysis in crohn's disease
- Conducted a non-proportional-hazards network meta analysis in ulcerative colitis
- Lead an indirect treatment comparison in crohn's disease
- Implemented a novel survival modelling technique into a cost-effectiveness model
- Lead the development of in-house R packages for survival analysis and indirect treatment comparisons

Statistical Analyst June 2022 – March 2024

OPEN Health Evidence and Access *York, UK*

- Worked on building and maintaining in-house R packages for survival analysis
- Performed and reported on the survival analyses of four clinical trials for submissions to health technology assessment agencies
- Performed a network meta analysis in multiple myeloma
- Gave two internal talks about network meta analysis methodologies
- Wrote statistical analysis plans for trial analyses and network meta analyses

Research Intern (Mathematical Finance) July 2021 – September 2021

Department of Mathematics, University of York *York, UK*

- EPSRC-Funded research internship
- Working on algorithms for finding convex envelopes of a given set of functions
- Review current and past literature to identify possible improvements
- Implementing algorithms using Python and looking for improvements in efficiency

Research Intern (Bioinformatics) July 2020 – September 2020

Department of Biology, University of York *York, UK*

- Developed a pipeline in Python for using the Burrows-Wheeler-Aligner and SAMTools to collect, sequence, align and call the peaks of ChIP-Seq data
- Created an R pipeline to apply machine learning libraries to the acquired data
- Identified transcription factors for further study into breast cancer treatment

Publications

Comparative Efficacy of Treatments in Advanced/Metastatic Pancreatic Cancer: Demonstrating the Power of Multi-Level Network Meta Regression, Value in Health, Volume 27, Issue 12, S2 (December 2024)

Discrete Event-Simulation Model Projects Mepolizumab Treatment Outcomes Associated With Long-Term Clinical Remission in Severe Asthma, American Journal of Respiratory and Critical Care Medicine, Issue 211 (May 2025)

Projects

A Network Meta Analysis for Treatments of Advanced/Metastatic Pancreatic Cancer June 2023 – June 2024

- Collected publications on Pancreatic Cancer trials
- Digitised published Kaplan-Meier curves
- Developed an R package to standardise the survival analysis functions and extracting results for the thesis
- Performed an indirect treatment comparison using the multilevel netowrk meta-regression framework
- Results published at ISPOR EU 2024

Statistical Methods for Resetting Score Targets in Limited-Overs Cricket October 2021 - April 2022

- Wrote python scripts to clean large amounts of match data
- Performed exploratory data-analysis using R
- Built and trained a neural network to predict cricket scores
- Built an R package for reproducible results

Skills

Programming Languages: R, Python, C/C++, Stan
Developer Tools: Git, Vim, VS Code, Rstudio Server, Rstudio Desktop
Communicative Languages: English, Norwegian
Presenting: Experienced at creating and giving talks/presentations in both Beamer and PowerPoint
Other: Excel, VBA, PowerBI, RShiny, R package development, LaTeX

Professional Memberships

Associate Member, Institute for Mathematics and its Applications

Royal Statistical Society