Matthew Sainsbury-Dale

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PROFILE

A hard-working statistician with a focus on spatial and spatio-temporal statistics. Excellent analytic skills, with well-developed programming abilities primarily centred around the use of `R` and `C++`, but also using `Python` and `Julia`. Experience working individually and in a team environment.

EDUCATION

University of Wollongong *March 2015 – November 2019*

· Bachelor of Mathematics Advanced (Honours; Class I)

University of Wollongong *March 2020 – Present*

· PhD in Statistics: "Modelling Complex Spatial and Spatio-Temporal Data". Under the supervision of Dr. Andrew Zammit-Mangion and Prof. Noel Cressie.

RESEARCH OUTPUTS

Journal Articles

· Sainsbury-Dale, M., Zammit-Mangion, A., and Cressie, N. (In prep.). Modelling, Fitting, and Prediction with Non-Gaussian Spatial and Spatio-Temporal Data using `FRK`.

· Cressie, N., Sainsbury-Dale, M., and Zammit-Mangion, A. (In press). Basis-Function Models in Spatial Statistics. *Annual Review of Statistics and its Applications.*

Software

· Co-author of the `R` package `FRK`, available on CRAN.

· Author of the `R` package `testarguments`, available on CRAN.

EXPERIENCE

School of Mathematics and Applied Statistics (SMAS) *March 2019 – Present*
Tutor

· Mathematics and statistics tutor for several subjects.

· Created the official subject notes for an Honours-level statistics subject.

Centre for Bioinformatics and Biometrics (CBB) *November 2018 – March 2019*
Intern

· Analysed single-site trials for the National Variety Trials (NVT) program.

· Conducted research and produced a substantial statistical report for the CBB.

Centre for Big Data Research in Health (CBDRH) *June 2018 – November 2018*
Research assistant

· Developed course material for the Masters level subject 'Machine Learning and Data Mining' at UNSW. This course covered many aspects of machine learning and data mining. The methods were implemented with `Python`, and the tutorials were held on the Jupyter notebook platform.

· Reviewed course material for a third year statistical modelling subject. Responsibilities included ensuring material was coherent and statistically sound, as well as debugging code.

KEY SKILLS

Programming	Highly proficient with `R`, and experience using `Julia`, `Python`, and `C++`. Able to quickly learn and use unfamiliar programming languages and packages.
Statistical Modelling	Firm knowledge of a wide range of statistical models and inferential methods.
Collaboration	Experience collaborating with peers using version control software, such as Github and Dropbox.
Data Mining	Exposure to frequently used data mining topics including clustering, classification, and regression algorithms. Use of `R` and `Python` to apply these methods.
Personal Traits	Excellent written and oral communication skills. Leadership qualities built through various leadership roles including High School Captain and Captain of representative sport teams. Experience working in team situations whilst also able to work alone. Highly self-motivated learner.

RELEVANT COURSES

Core Courses	**Other Courses**
Advanced Data Analysis	Data Mining & Knowledge Discovery
Linear & Generalised Linear Models	Applied Mathematical Modelling I, II, III
Statistical Inference	Complex Variables & Group Theory
Sample Surveys & Experimental Design	Differential Equations I, II, III
Applied Bayesian Methods	Multivariate & Vector Calculus
Estimation & Hypothesis Testing	Linear Algebra

REFEREES

- Dr. Andrew Zammit-Mangion, Senior Research Fellow at the National Institute for Applied Statistics Research Australia (NIASRA). Contact details available upon request.