Gavin Whitaker Curriculum Vitae

Contact Information

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Educational Background

Newcastle University September 2011 – July 2016

Qualification	PhD in Statistics
Thesis Title	Bayesian Inference for Stochastic Differential Mixed-effects Models
Supervisors	Dr Andrew Golightly and Prof Richard Boys

Newcastle University September 2007 – June 2011

Qualification	Master of Mathematics and Statistics (MMathStat)
Grade	First Class Honours
Masters Title	The Bivariate Poisson Distribution and its Applications to Football
Supervisor	Dr Philip Ansell

Scarborough Sixth Form College September 2005 – June 2007

4 A Levels: Mathematics (A), Further Mathematics (B), History (B), Drama and Theatre Studies (B).

George Pindar Community Sports College September 2000 – June 2005

10 GCSE's at A*-C including A's in Mathematics, Science and English. Full list available on request.

Technical Skills

Statistical Skills

I am interested in, and have experience working with: Stochastic differential equations, Markov chain Monte Carlo methods, Bayesian statistics, mixed/random effects modelling, Bayesian hierarchical models, variational inference, time series analysis and sports modelling.

Computer Packages

`R` - I am an experienced user of the Statistical package `R` and write my own functions; these are mainly built around Markov Chain Monte Carlo schemes.

C - I have experience with the C programming environment, gained from requiring greater efficiency in the codes I used for my PhD. This includes parallelisation through the use of `openmp`.

`Python` - I have experience with `Python`, writing my own functions and classes, along with utilising packages such as `pystan` and `pymc3`.

I am very experienced with Microsoft Office and proficient with all its elements, word processing, spreadsheets, presentations etc.

I also have experience with numerous other computer packages such as LaTeX (Typesetting program for preparing documents and presentations), Minitab (Statistical software), HTML (HyperText Markup Language) and SVN and Git (Version control).

Operating Systems

I am very familiar with Microsoft Windows and Ubuntu Linux operating systems. I have experience in programming from the command line in Ubuntu.

Roles and Responsibilities

I am a committee member for the Royal Statistical Society Statistics in Sport Section and belong to The Alan Turing Institute "Data science for sports, activity, and well-being" interest group. For both, I help to organise talks and events, arranging speakers and sessions, along with general organisation.

Problems class leader for undergraduate studies at Newcastle University. I have presented the full set of problems classes (33 hours) for a first year course on "Quantitative Methods for Business Management", consisting of an 11 hour course repeated 3 times for approximately 100 undergraduate students (2013).

Practical demonstrator for undergraduate studies at Newcastle University. I have demonstrated for several courses using statistical packages `R` and Minitab.

I helped to organise the Royal Statistical Society Graduate Training Programme, an annual course for 2nd and 3rd year PhD students in Statistics, held at Newcastle University and funded by the EPSRC. My role included advertising the course, designing and maintaining its website, overseeing the registration process for attendees, liaising with speakers and the general organisation of the course (2012-2015).

(Selected) Publications

Whitaker GA, Silva R, Edwards D. "Visualizing a team's goal chances in soccer from attacking events: a Bayesian inference approach" In submission.

Whitaker GA, Silva R, Edwards D. "A Bayesian inference approach for determining player abilities in soccer." In submission.

Tsokos A, Narayanan S, Kosmidis I, Baio G, Cucuringu M, Whitaker GA, Király FJ. "Modeling outcomes of soccer matches." Machine Learning. In press.

Whitaker GA, Golightly A, Boys RJ, Sherlock C. "Improved bridge constructs for stochastic differential equations." Statistics and Computing, 2017, 27(4), 885-900.

Whitaker GA, Golightly A, Boys RJ, Sherlock C."Bayesian inference for diffusion-driven mixed-effects models." Bayesian Analysis, 2017, 12(2), 435-463.

(Selected) Presentations

July 2018, ISBIS, University of Piraeus, Greece:
Using player abilities to predict football.

June 2018, ISBA 2018, Edinburgh (poster presentation):
A Bayesian inference approach for determining player abilities in football.

December 2017, RSS local group seminar, Newcastle University:
Using player abilities to predict football.

June 2016, ISBA 2016, Sardinia (poster presentation):
Bayesian inference for diffusion driven mixed-effects models.

April 2014, Research Students Conference, Nottingham University:
Bayesian inference for stochastic differential random effects models (winning a prize for best talk).

Recent Employment

Research Associate July 2014 – May 2015
School of Mathematics & Statistics
Newcastle University

I worked as a statistician on the Customer Led Network Revolution, a project which examined the effect of new technologies on the electricity usage of different levels of consumer. The project was a collaboration between Newcastle University, Durham University, Northern Powergrid and British Gas. Tasks included the analysis of a "large" dataset using methods such as ANOVA, helping to explain technical details so that they could be presented in non-technical reports, and conveying subtle intricacies of statistics to non-statisticians, such as the correct interpretation of hypothesis tests.

Knowledge Transfer Partnership Associate November 2016 – Present
Department of Statistical Science
University College London

I worked as a statistician on a project between University College London and Stratagem Technologies which looked at modelling football. In a Bayesian setting we used both variational techniques and Gaussian mixture models to model a players ability for a given skill, and where on the pitch they would have most influence. The ultimate aim was to make accurate predictions about match outcomes. Techniques for large data were needed. In addition to the research aspect of the project, I gave both formal and informal seminars to industry and university members to ensure the transfer of knowledge between both partners of the project. Visualisation techniques to convey results to those in the industry in a non-technical manner were also explored.

References

Available on request.

Availability

1st November 2018.