

Fabian R. Ketwaroo

Room 243, Statistical Ecology @ Kent, School of Mathematics, Statistics and Actuarial Science University of Kent,
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Research Interests

Ecological statistics, Spatial and spatio-temporal modelling, Spatial Capture-Recapture models, N-mixture models, Dynamic Occupancy models, Objective priors, Bayesian Model and Variable selection, Bayesian Non-parametric methods, Theory and Applications, Computational Methods.

Education

PhD in Statistics

United Kingdom

UNIVERSITY OF KENT

2019 – 2023

- Title: Bayesian hierarchical models for ecological data; estimating population size, spatial and temporal patterns.
- Supervisor: Dr. Eleni Matechou

International MSc Statistics

United Kingdom

UNIVERSITY OF KENT

2017 – 2019

- Distinction
- MSc dissertation title: N-Mixture models from a Bayesian perspective.
- Relevant modules: Statistical learning, Advance regression modelling, Pratical statistics and computing.

BSc. Mathematics

Guyana

UNIVERSITY OF GUYANA

2011 – 2015

- Distinction (3.6/4.0 GPA).

Academic Qualifications

Associate Fellow

United Kingdom

Advanced Higher Education

2021

Graduate Statistician

United Kingdom

Royal Statistical Society

2019–2021

Computing skills

Programming

R (advanced), Rshiny (advanced), NIMBLE (advanced), C/C++ (intermediate), Python (intermediate)
Stan (beginner), JavaScript (beginner), GitHub (beginner), Google Earth Engine (beginner)

Typesetting system

LaTeX (advanced), Quarto (beginner), Tableau (beginner)

Awards & Scholarships

2020	Research grant , University of Kent	United Kingdom
2019	Vice Chancellor's Research Scholarship , University of Kent	United Kingdom
2019	School prize in MSc Statistics for highest examination results, including best MSc project , University of Kent	United Kingdom
2019	RSS prize for best MSc Statistics student , University of Kent	United Kingdom
2012	3rd Place , P.A.N.A.M. Powerlifting Championship	Orlando, U.S.A

Experience

Research Associate Instituto Pirenaico De Ecologia (CSIC)

United Kingdom

UNIVERSITY OF KENT

May 2023 - Jul 2023

- Applying Bayesian Hierarchical modelling techniques to develop dynamic occupancy models to predict species range dynamics incorporating Bayesian variable selection in software R, based on NIMBLE.

Statistics Clinic Lead

United Kingdom

UNIVERSITY OF KENT

Sep 2022 - Jun 2023

- Employed by the Student Learning Advisory Service to assist undergraduate/postgraduate students from across the university with their understanding of statistics.

Graduate Teaching Assistant

United Kingdom

UNIVERSITY OF KENT

Sep 2019 - Mar 2023

- Marked assessments and provided assistance in computer classes and tutorials in modules such as Mathematical Statistics, Statistical Learning, Advanced Regression modelling, Data Science with R.
- Created online quizzes for the module Applied Statistical Modelling 1.

Senior Ambassador

United Kingdom

UNIVERSITY OF KENT

Sep 2018 - Mar 2023

- Math Tutor for GCSE students at a mixed secondary school in Ramsgate.
- Ambassador team member for
 - guided tours on University of Kent open days,
 - Outreach event: Statistics Gone Wild,
 - Royal Institution Masterclasses.

Research Assistant

United Kingdom

UNIVERSITY OF KENT

Nov 2019 - Aug 2020

- Developed and implemented Rshiny app to model Caste-Specific Demography and Phenology in Bumblebees using citizen science data.

Part-time Tutor (On-Line Programme)

Guyana

UNIVERSITY OF GUYANA

Mar 2017 - Jul 2017

- Promoted discussions, monitored students' progress and assessed students' work for modules: Introducing Statistics and Essential Mathematics.

Lecturer in Mathematics

Guyana

UNIVERSITY OF GUYANA

Sep 2015 - Jun 2017

- Taught and evaluated modules such as Calculus, Groups Rings and Field, Linear Algebra and Applied Mathematics.

Professional Development

Asymptotic Methods and Statistical Applications

London Taught Course Centre

United Kingdom

2020

Advanced Computational Methods in Statistics

London Taught Course Centre

United Kingdom

2019

Maximum Entropy Models for Complex Networks

London Taught Course Centre

United Kingdom

2019

Projects

Modelling disease dynamics from spatially-explicit capture-recapture data

Spatio-temporal modelling of European badgers to better understand how disease (bovine tuberculosis (TB)) dynamics are linked to population dynamics within a spatial context. SUBMITTED TO ENVIRONMETRICS. DRAFT:

BLOGS.KENT.AC.UK/FKETWAROO/RESEARCH/SCR-DISEASE-UNCERTAINTY/

University of Kent

2019-2023

Specifying, Assessing and Selecting N-mixture Models in a Bayesian framework

Implementing objective priors for N-mixture models and investigating model selection and identifiability of N-mixture model within a Bayesian framework. TO BE SUBMITTED TO METHODS IN ECOLOGY AND EVOLUTION. DRAFT:

BLOGS.KENT.AC.UK/FKETWAROO/RESEARCH/N-MIXTURE-MODELS-IN-A-BAYESIAN-FRAMEWORK/

University of Kent

2019-2023

A New Modeling Framework for Roost Count Data

Novel modelling framework that can be used to estimate population size at a site, while accounting for observation error and temporary emigration parametrically and non-parametrically, including efficient variable selection algorithms for identifying important predictors of observation error. SUBMITTED TO ANNALS OF APPLIED STATISTICS.

DRAFT: BLOGS.KENT.AC.UK/FKETWAROO/RESEARCH/MODELLING-FRAMEWORK-FOR-ROOST-COUNT-DATA/

University of Kent

2021-2023

Bayesian Caste-Specific Demography and Phenology in Bumblebees: Modeling BeeWalk Data.

University of Kent

New Bayesian model for Bumblebee citizen science data in the U.K. This model produces estimates of key demographic parameters such as caste-specific phenology and average nest productivity, in the wild. I implemented the model into an R shiny app, allowing users without prior knowledge of R to fit the model to their data. TO BE

SUBMITTED TO THE JOURNAL OF THE ROYAL STATISTICAL SOCIETY: SERIES C (APPLIED STATISTICS) OR JOURNAL OF AGRICULTURAL, BIOLOGICAL AND ENVIRONMENTAL STATISTICS.

Nov 2020- Aug 2021

DRAFT: [BLOGS.KENT.AC.UK/FKETWAROO/RESEARCH/4-BAYESIAN-CASTE-SPECIFIC-DEMOGRAPHY-AND-PHENOLOGY-IN-BUMBLEBEES/](https://blogs.kent.ac.uk/fketwaroo/research/4-bayesian-caste-specific-demography-and-phenology-in-bumblebees/)

Conferences and Workshops

2023	National Centre for Statistical Ecology , In-person	Swansea, Wales
2023	EURING Analytical Meeting & Workshop , Online	France
2022	International Statistical Ecology Conference , Online	South Africa
2021	National Centre for Statistical Ecology , Online	United Kingdom
2021	EURING Analytical Meeting & Workshop , Online	CANADA
2021	Bayesian Young Statisticians Meeting, j-ISBA , Online	United Kingdom
2020	NIMBLE workshop , Online	U.S.A
2020	International Statistical Ecology Conference , Online	Australia

Presentations

National Centre for Statistical Ecology

In-person

TALK: A New Modelling Framework for Roost Count Data.

June. 2023

EURING Analytical Meeting & Workshop

Online

TALK: How to Walk the BeeWalk: Modelling Bumblebee Citizen Science Data

April. 2023

International Statistical Ecology Conference

Online

POSTER PRESENTATION: A New Modelling Framework for Roost Count Data.

July. 2022

National Centre for Statistical Ecology

Online

TALK: Spatially Explicit Capture-Recapture Disease Uncertainty Models

June. 2021

PGR Statistics Seminar, University of Kent

Online

TALK: How to Walk the BeeWalk: Modelling Bumblebee Citizen Science Data

Mar. 2021

International Statistical Ecology Conference

Online

TALK: Objective Priors from Scoring rules for N-mixture models

June. 2020