UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Research Fellow in Extreme Value Modelling and Machine Learning, Faculty of Engineering & Physical Sciences

Salary: Grade 7 (£33,797 – £40,322 p.a.)

Reference: EPSMA1016

Closing date: 29 March 2020

Fixed-term until 31 March 2021

We will consider job share / flexible working arrangements

Research Fellow in Extreme Value Modelling and Machine Learning,
School of Mathematics.

Are you a motivated researcher or a skilled professional returning to academia and looking for your next challenge? Do you wish to work in a vibrant interdisciplinary environment at one of the UK's leading research-intensive universities? Would you like to gain first-hand experience in developing novel techniques in statistical modelling and data analytics?

We are looking for a talented Research Fellow to join a project in statistical modelling and machine learning, which aims to develop a state-of-the-art multivariate extreme value model and package it into a user-friendly commercial prototype software solution, which can process a real-time data feed and provide a validated prediction of future extreme events.

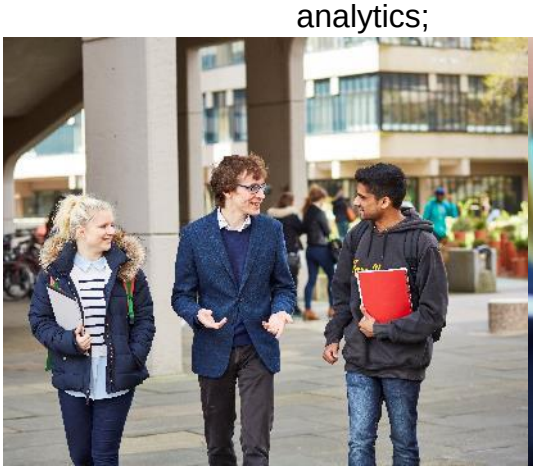
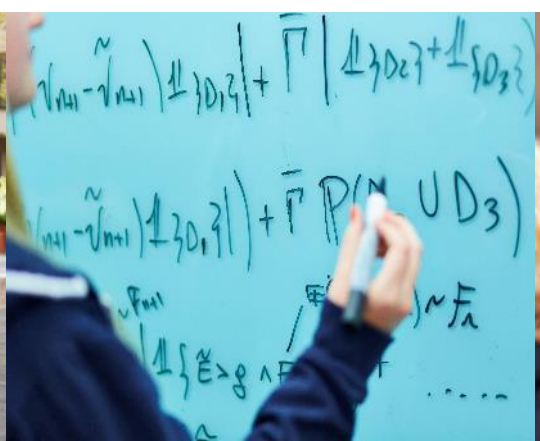
You will work in close contact with Dr Leonid Bogachev (PI) in the Department of Statistics, and you will join our Modern Applied Statistics and Statistical Methodology and Probability research groups, as well as the Leeds Institute for Data Analytics (LIDA). The post is fixed-term until 31 March 2021 and is available starting from 1 January 2020 or as soon as possible thereafter (upon mutual agreement).

You will have a PhD in a relevant discipline (e.g. Statistics, Applied Statistics, Data Science, Data Analytics), together with experience in extreme value modelling and in Monte Carlo Markov Chain (MCMC) machine learning techniques. You will also have the ability to conduct independent research and a developing track record of publications in international journals. In addition, you will have excellent communication, planning and team working skills.

What does the role entail?

As a Research Fellow, your duties will include:

- Designing, planning and conducting a programme of investigation, in consultation with Dr Bogachev;
- Generating and pursuing independent and original research ideas in statistical modelling of extreme values and its applications to machine learning and data analytics;

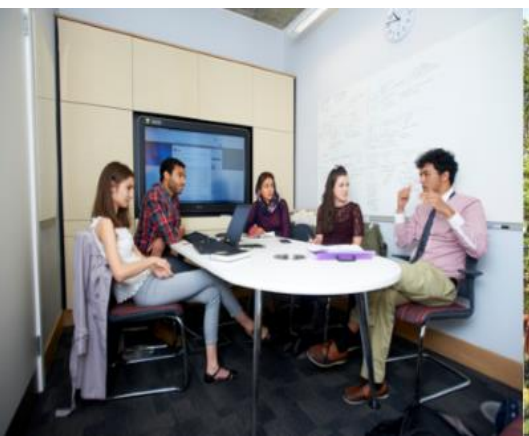
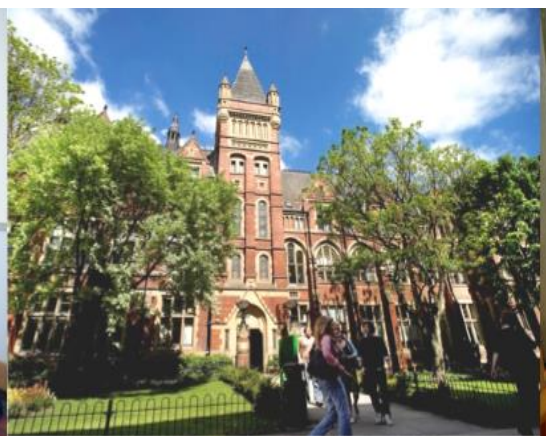
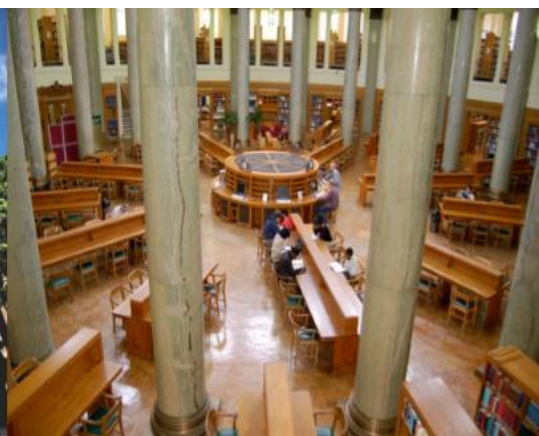

- Developing research objectives and proposals and contributing to setting the direction of the research project and team including preparing proposals for funding in collaboration with colleagues;
- Developing and prototyping new statistical and machine learning techniques that can be used by other researchers, practitioners and industries;
- Evaluating methods and techniques used and results obtained by other researchers and relating such evaluations appropriately to your own work;
- Preparing papers, arising from the research on the project, for publication in leading international journals and disseminating research results through other recognised forms of output;
- Working both independently and also as part of a larger team of researchers, engaging in knowledge-transfer activities where appropriate and feasible;
- Maintaining your own continuing professional development and acting as a mentor to less experienced colleagues as appropriate;
- Contributing to the training of both undergraduate and postgraduate students, including assisting with the supervision of projects in areas relevant to the project.

These duties provide a framework for the role and should not be regarded as a definitive list. Other reasonable duties may be required consistent with the grade of the post.

What will you bring to the role?

As a Research Fellow, you will have:

- A PhD (or have submitted your thesis before taking up the role) in Statistics, Applied Statistics, Data Science, Data Analytics, or a closely allied discipline;
- A strong background and experience in statistical modelling and data analysis;
- Competence in statistical computing including Markov Chain Monte Carlo techniques and R or Python programming;
- Excellent time management and planning skills, with the ability to meet tight deadlines, manage competing demands and work effectively under pressure without close support;
- A proven track record of peer-reviewed publications in high impact factor journals;
- Excellent written and verbal communication skills including presentation skills;
- A proven ability to work well both individually and in a team;

- A strong commitment to your own continuous professional development.

You may also have:

- Experience of pursuing external funding to support research;
- Familiarity with Peaks-over-Threshold (POT) techniques;
- Familiarity with multivariate Pareto distributions;
- Experience and understanding of data fusion / data assimilation;
- Experience in penalised regression including LASSO;
- Experience in feature extraction / dimension reduction;
- Familiarity with intensive statistical computing.

How to apply

You can apply for this role online; more guidance can be found on our How to Apply information page. Applications should be submitted by **23.59** (UK time) on the advertised closing date.

Contact information

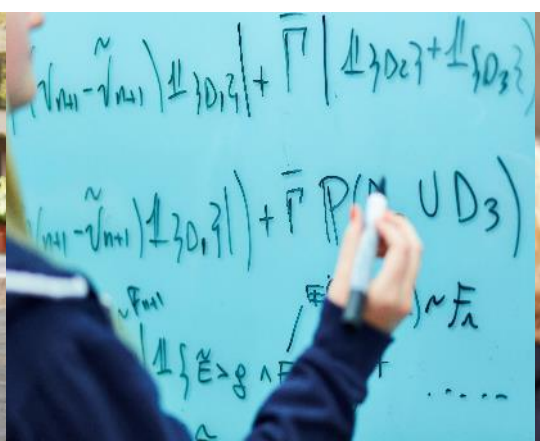
To explore the post further or for any queries you may have, please contact:

Dr Leonid Bogachev, Reader in Probability
Tel: +44(0)113 343 4972
Email: L.V.Bogachev@leeds.ac.uk

Additional information

Faculty and School Information
Find out more about the Faculty of Engineering and Physical Sciences, School of Mathematics and our Research and associated facilities.

A diverse workforce
The Schools in the Faculty of Engineering & Physical Sciences are proud to have been awarded the Athena SWAN Bronze Award from the Equality Challenge Unit, the national body that promotes equality in the higher education sector. Our equality and inclusion webpage provides more information.



Working at Leeds
Find out more about the benefits of working at the University and what it is like to live and work in the Leeds area on our Working at Leeds information page.

Candidates with disabilities
Information for candidates with disabilities, impairments or health conditions, including requesting alternative formats, can be found on our Accessibility information page or by getting in touch with us at disclosure@leeds.ac.uk.

Criminal record information

Rehabilitation of Offenders Act 1974
A criminal record check is not required for this position. However, all applicants will be required to declare if they have any 'unspent' criminal offences, including those pending.

Any offer of appointment will be in accordance with our Criminal Records policy. You can find out more about required checks and declarations in our Criminal Records information page.