

Candidate Brief

Research Associate in Mathematics

Reference: R180451

Salary: Grade 8, £33,199 to £39,609 per annum

Contract Type: Fixed Term (3 years)

Basis: Full Time

Closing Date: 23.59 hours GMT on Thursday 15 November 2018

Interview Date: To be confirmed

EXCELLENT
DIFFERENT
DISTINCTIVE
ASTON



Job description

Job Purpose:

We seek a highly motivated individual for this postdoctoral research position in the general areas of statistical physics, machine learning and Bayesian inference. The emphasis of this research will be on developing and employing theoretical and numerical methods from Bayesian statistics, machine learning and statistical physics to optimise routing and containment strategies on optical networks as well as the inference and optimisation of operational parameters in single channels.

The candidate should have excellent mathematical and computational skills and have a background in statistical physics, machine learning and Bayesian inference; knowledge of optics/laser-based systems is an advantage.

While the main thrust of the work will be carried out within SARI and with Professor Saad, the position is part of the multi-institutional EPSRC-funded programme grant TRANSNET; hence, a significant level of collaboration with the Aston Institute of Photonics Technologies, University College London and Cambridge University is expected.

Main Duties/Responsibilities:

- ▶ Carry out research work, analytically and numerically, jointly with the investigator in the general area of optical communication networks, particularly on routing optimisation, containment of cascading failures, parameter inference and optimisation at the single channel level.
- ▶ Apply established techniques and develop new methods inspired by statistical physics methodology and machine learning for modelling, inferring and optimising routing decisions.
- ▶ Implement the new algorithms, models and methods developed in software and study numerically their suitability to real world data.
- ▶ Engage with researchers and practitioners within TRANSNET and beyond to make sure that the methods developed are relevant and address the problems at hand.
- ▶ Disseminate the work through high-quality journal publications and presentations at national and international conferences.
- ▶ Aid in the supervision of Post-Graduate students in this area as needed.
- ▶ Any other duties appropriate to the role of PDRA.

Teaching

- ▶ To help in delivering tutorials in the group's undergraduate/postgraduate programmes.

Community Engagement

- ▶ To be involved in outreach activities to raise the regional and national profile of the School of Engineering & Applied Science in general and the Mathematics group in particular.

Other related activities and functions

- ▶ To undertake such other duties as may be reasonably requested and that are commensurate with the nature and grade of the post.

Additional responsibilities

- ▶ Engage in continuous personal and professional development in line with the demands of the role, including undertaking relevant training and development activities to develop themselves and support the development of others.
- ▶ Ensure and promote the personal health, safety and wellbeing of staff and students.
- ▶ Carry out duties in a way which promotes fairness in all matters and which engenders trust.
- ▶ Promote equality of opportunity and support diversity and inclusion as well as working to support the University's environmental sustainability agenda and practices.

Person specification

	Essential	Method of assessment
Education and qualifications	A PhD in a relevant discipline, e.g. Mathematics, theoretical Physics or related subject.	Application form
Research area	Active research in the area of theoretical physics, Bayesian methods, probabilistic modelling, machine learning or neighbouring research fields.	Application form and interview
Experience	<p>Experience of conducting independent research.</p> <p>A track record of publications in internationally excellent journals and conferences.</p>	<p>Application form and interview</p> <p>Application form, interview and presentation</p>
Aptitude and skills	Ability to carry out a methodical and structured research plan.	Application form and interview

	Desirable	Method of assessment
Research area	Knowledge and understanding of optics and laser-based systems.	Application form and interview
Experience	A track record of research output and esteem.	Application form and interview
Aptitude and skills	Ability to provide tutorials to undergraduate and postgraduate students.	Application form and interview

How to apply

You can apply for this role online via our website www.aston.ac.uk/jobs. Applications should be submitted by 23.59pm on the advertised closing date. All applicants must complete an application form, along with your CV.

Any CV sent direct to the Recruitment Team and Recruiting Manager will not be accepted. If you require a manual application form then please contact the Recruitment Team via recruitment@aston.ac.uk.

Contact Information

Enquiries about the vacancy:

Name: Professor David Saad

Job Title: Professor in Mathematics

Tel: 0121 204 3645

Email: D.Saad@aston.ac.uk

Enquiries about the application process, shortlisting or interviews:

Recruitment Team via recruitment@aston.ac.uk or 0121 204 4500.

Additional Information

Visit our website www.aston.ac.uk/hr for full details of our salary scales and benefits Aston University staff enjoy

Salary Scales: <http://www.aston.ac.uk/staff/hr/payroll-pensions-and-benefits/salary-scales/>

Benefits: <http://www.aston.ac.uk/staff/hr/payroll-pensions-and-benefits/>

Working in Birmingham: <http://www.aston.ac.uk/birmingham/city-living/>

Employment of Ex-Offenders: Under the Rehabilitation of Offenders Act 1974, a person with a criminal record is not required to disclose any spent convictions unless the positions they applying for is listed an exception under the act.

Eligibility to work in the UK: Candidates who are not citizens of the United Kingdom, or another EEA member country, should check their eligibility to enter or remain the UK in advance of making any job application via the UKVI website <https://www.gov.uk/browse/visas-immigration/work-visas>. Before applying you should ensure that you meet the requirements, including meeting the English language standards. If you do not meet the eligibility criteria, any application for a work visa would be unsuccessful

Equal Opportunities: Aston University promotes equality and diversity in all aspects of its work. We aim to ensure, through our admissions policies for students, and our staff recruitment and selection processes that we encourage applications from all groups represented in the wider community at a local, national and international level.

The University will endeavour not to discriminate unfairly or illegally, directly or indirectly, against student or potential students, staff or potential staff. This commitment applies to all functions of the University and to any stage of an individual's career.

An Equal Opportunities Monitoring Form is included within the application form. Data you provide on the Equal Opportunities Monitoring Form will be included in a general database, for statistical monitoring purposes, enabling the University to monitor the effectiveness of its Policy, Codes of Practice and Guidelines on Equal Opportunities in Employment. Individuals will not be identified by name.

Data Protection Act 1998: Your personal data will be processed in compliance with the DPA and from 25 May 2018 with the GDPR. The University's Data Protection Policy and Privacy Notices, including the Job Applicant Privacy Notice can be found at <http://www.aston.ac.uk/data-protection>. Your application will only be used to inform the selection process, unless you are successful, in which case it will form the basis of your personal record with the University which will be stored in manual and/or electronic files. Information in statistical form on present and former employees is given to appropriate outside bodies.



Full details of our terms and conditions of service and associated policies and procedures are available online at www.aston.ac.uk/hr