



OPPORTUNITY

Research Associate in Mathematics

Reference: 0186-24

Grade: 8

Salary: £34,304 to £44,263 - depending on experience

Contract Type: Fixed Term (36 months)

Basis: Full time

Job description

Job Purpose:

We seek a highly motivated individual for this postdoctoral research position in the general areas of Bayesian inference and statistical physics to contribute to, develop and lead research activities of the School either independently or as part of a team. The emphasis of this research will be on using theoretical and numerical methods from Bayesian statistics and statistical physics for mode decomposition in optical communication and imaging. The candidate should have excellent mathematical and computational skills and background in Bayesian inference and statistical physics.

Main duties and responsibilities

- ▶ To carry out research work, analytically and numerically, jointly with the investigators in the use of probabilistic methods for mode decoupling in optical communication and imaging.
- ▶ To apply established techniques and develop new methods inspired by statistical physics methodology for addressing key challenges in mode decoupling through the application of an appropriate noise models, symmetries, and priors.
- ▶ To implement the new algorithms, models and methods developed in software and study numerically their suitability to real world data.
- ▶ To disseminate the work through high-quality journal publications and presentations at national and international conferences.
- ▶ To assist in the supervision of Post-Graduate students in this area as needed.
- ▶ Any other duties appropriate to the role of PDRA.
- ▶ Carry out research work, analytically and numerically, jointly with the investigators, in the use of probabilistic methods for mode decoupling in optical communication and imaging.
- ▶ Apply established techniques and develop new methods inspired by statistical physics methodology for addressing key challenges in mode decoupling through the application of appropriate noise models, symmetries, and priors.
- ▶ Implement the new algorithms, models and methods developed in software and study numerically their suitability to real world data.
- ▶ Write and disseminate the work through high-quality journal publications and presentations at national and international conferences.
- ▶ To collaborate in research initiatives with colleagues in and beyond the School as appropriate.
- ▶ Assist in the supervision of Post-Graduate students in this area as needed.
- ▶ Any other duties appropriate to the role of PDRA.
- ▶ To help in delivering tutorials in the group's undergraduate/postgraduate programmes.
- ▶ To undertake such other duties as may be reasonably requested and that are commensurate with the nature and grade of the post.
- ▶ To be involved in outreach activities to raise the regional and national profile of the
- ▶ College of Engineering & Physical Sciences in general and the Applied Mathematics and Data Science group in particular

- ▶ 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
Experience	<p>Active research in the area of theoretical physics, Bayesian methods, probabilistic modelling, or neighbouring research fields.</p> <p>Experience of writing up/contributing to the write up of research for high quality publications.</p> <p>Experience of producing papers, posters, reports presenting at seminars, conferences etc.</p> <p>Experience of positive collaboration within and outside of candidate's immediate research team.</p>	Application form and interview
Aptitude and skills	<p>Ability to present data in both a clear and concise manner that is visually appealing.</p> <p>Ability to prepare written communications to a high standard.</p> <p>Ability to develop and maintain a structured research programme and to publish in high quality publications.</p> <p>Strong mathematical and computational skills.</p>	Application form and interview

	Desirable	Method of assessment
Aptitude and skills	Ability to provide tutorials and help with supervision for undergraduate and postgraduate students.	Application form and interview

How to apply

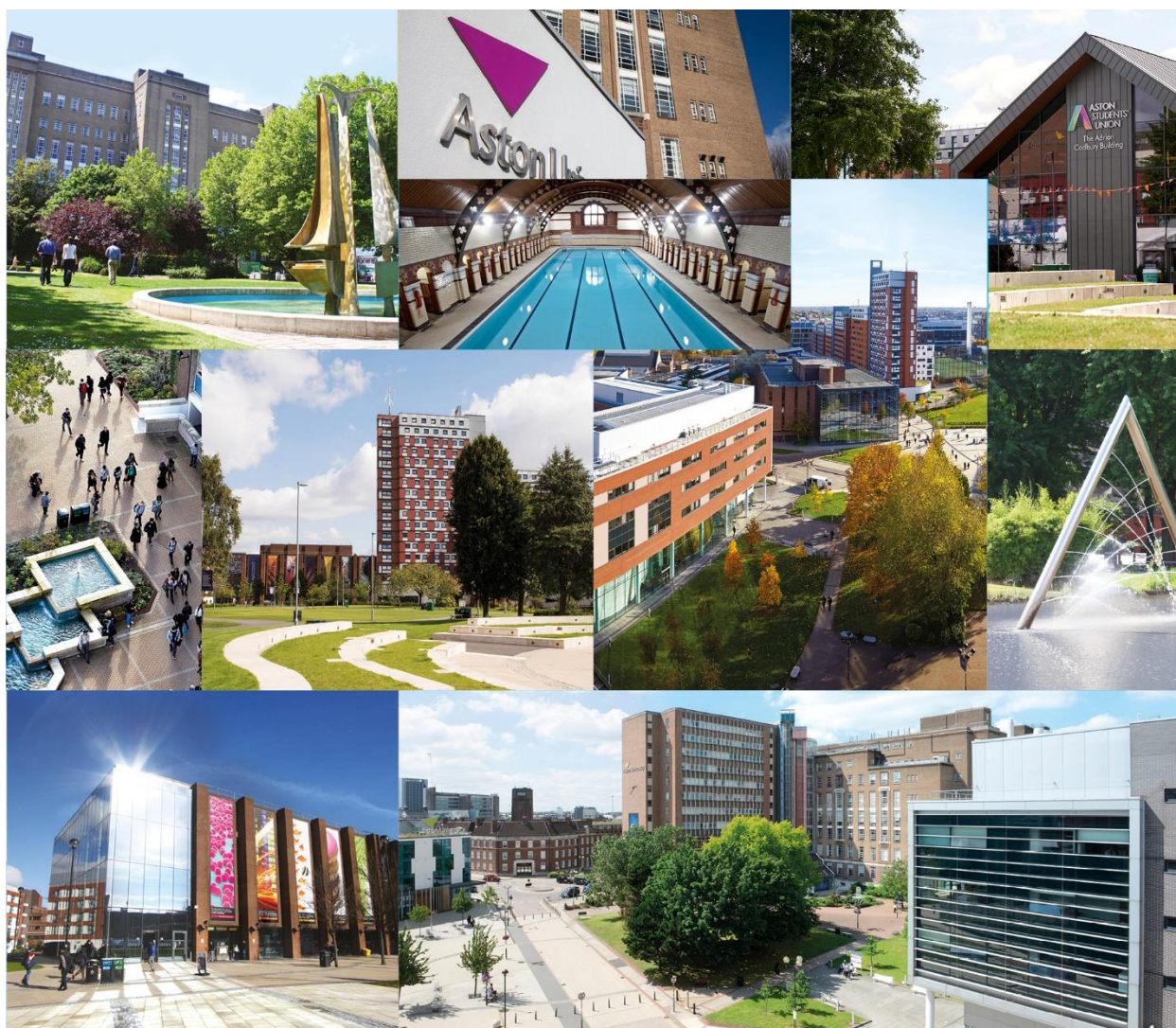
You can apply for this role online via our website <https://www2.aston.ac.uk/staff-public/hr/jobs>.

Applications should be submitted by 23:59 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: David Saad

Job Title: 50th Anniversary Chair of Complexity Physics

Tel: +44 121 2043648

Email: D.Saad@aston.ac.uk

Enquiries about the application process, shortlisting, or interviews:

Recruitment Team via Recruitment Team via recruitment@aston.ac.uk

Additional information

Visit our website <https://www2.aston.ac.uk/staff-public/hr> for full details of our salary scales and benefits Aston University staff enjoy

Salary scales: <https://www2.aston.ac.uk/staff-public/hr/payroll-and-pensions/salary-scales/index>

Benefits: <https://www2.aston.ac.uk/staff-public/hr/Benefits-and-Rewards/index>

Working in Birmingham: <https://www2.aston.ac.uk/birmingham>

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 are applying for is listed an exception under the act.

Eligibility to work in the UK:

Post-Brexit transition period / EU Settlement Scheme

The post-Brexit transition period ended on 31 December 2020. If you are an EU/EEA citizen and you were a resident in the UK before 31 December 2020, you, and your family members (including non-EU citizens need to apply to the EU Settlement Scheme to continue to live, work and study in the UK beyond 30 June 2021. The deadline for applying to the EU settlement scheme is 30 June 2021. You can apply via the Government webpage <https://www.gov.uk/settled-status-eu-citizens-families>

Irish Nationals do not need to apply for settlement as they retain the right to work in the UK.

New immigration system for EU/EEA and Swiss Nationals who were not resident in the UK before 31 December 2020

A new immigration system has been introduced for people arriving in the UK from EEA countries with effect from 1 January 2021. In addition to those who have always required a visa, EU citizens moving to the UK to work will need to get a visa in advance. You can find more information on the following website. Candidates should check their eligibility to enter or remain in 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 requirements. If you do not meet the eligibility criteria, any application for a work visa would be unsuccessful. If you require a visa to work in the UK, the most common types of visas are:

Skilled Worker Visa

<https://www.gov.uk/skilled-worker-visa>

Global Talent Visa

If you are a leader or potential leader in one of the following fields, you may be eligible to apply for a Global Talent Visa:

- Academia or Research
- Arts and Culture
- Digital Technology

Please click the following link for further information and to check your eligibility for this visa.

<https://www.gov.uk/global-talent>

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: Your personal data will be processed in compliance with the Data Protection Act 2018 and the General Data Protection Regulation ((EU) 2016/679) ("GDPR"). The University's Data Protection Policy and Privacy Notices, including the Job Applicant Privacy Notice can be found at <https://www2.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 <https://www2.aston.ac.uk/staff-public/hr/policies>

Aston University

Birmingham

B4 7ET, UK.

+44 (0)121 204 3000

aston.ac.uk



**Where change
gets real.**