

# OPPORTUNITY

## Postdoctoral Research Associate in applied informatics / FAIR and interoperable environmental data science

**Reference:** R220727

**Grade:** 8

**Salary:** £35,333 to £38,592 per annum, depending on experience

**Contract Type:** Fixed term (28 months)

**Basis:** Full Time

# Job description

## **Job Purpose:**

To create and contribute to the creation of knowledge by undertaking a specified range of activities within an established research program and/or specific research project.

The post holder will work within the Horizon Europe / InnovateUK funded project 'AllData4GreenDeal' (AD4GD) <https://www.ad4gd.eu/>. The consortium includes expert partners from 12 Universities, Research Institutes, SMEs, Governmental bodies and non-profit organizations across Europe and the UK. The Aston University team (lead academic and two PDRAs) will engage with a wide range of stakeholders and technologies to lay the groundwork for three exciting pilot case studies focussing on pollution, biodiversity and climate change, and will then coordinate the consortium in the implementation and delivery of those pilot studies.

AD4GD's mission is to co-create and shape the European Green Deal Data Space as an open hub for FAIR data and standards-based services. The focus will be on interoperability to bridge semantic and technology gaps, allowing stakeholders from many disciplines and application domains to access data and processing services that support decision-making around Green Deal priorities.

AD4GD will enable the integration of data from remote sensing, established Virtual Research Environments and Research Infrastructures, Internet of Things (IoT), socio-economic data, INSPIRE and Citizen Science in an interoperable, scalable and reliable manner. It will facilitate integration by including semantic mappings to different standards and dominant models bridging domain- and data source-specific semantic concepts such as the Essential Variables framework, as well as applying machine learning and geospatial user feedback to ensure quality, reliability and trustworthiness of data and workflows.

## ***Main Duties and Responsibilities***

- ▶ Collect research data through a variety of methods including literature reviews, direct stakeholder engagement and scientific experimentation.
- ▶ Develop research objectives and plans for personal and joint research, with the assistance of a mentor if required.
- ▶ Contribute to developing new models, techniques and technical tools.
- ▶ Analyse and interpret data, and apply knowledge in a way which develops new intellectual understanding
- ▶ Disseminate research findings in high quality publications, research seminars, etc.
- ▶ Present papers, posters and reports at seminars, conferences etc.
- ▶ Collaborate on specified research tasks with colleagues at Aston and the wider consortium, and lead these tasks where required.
- ▶ Deal with problems that may affect the achievement of research objectives and deadlines
- ▶ Provide guidance, as required, to support staff and any students who may be assisting with the research.

## **Specific tasks as defined in the project bid:**

- ▶ Lead work on;

- Engaging with data producers, users and managers to identify standards, models and concepts that underpin Green Deal topics and which can support interoperability of data from Citizen Science, IoT, socioeconomic and other sources.
  - Harmonising the semantics and models used, based on robust frameworks including INSPIRE, OGC and the Essential Variables.
- ▶ Work with other consortium members to define a set of best practices for managing in situ, socioeconomic and Citizen Science data following FAIR principles. The work will involve migrating current data services into modern APIs (e.g. Sensor Things APIs and the new OGC web APIs) while preserving metadata on data quality and provenance.
  - ▶ Manage the interoperable provenance documentation of AI and Machine Learning workflows (developed by project partner ATOS) including components such as data cleaning, assimilation and analysis. This task will include documentation of quality and uncertainty information for data and algorithms, using available open standards as appropriate.
  - ▶ Work with the Aston line manager and one other PDRA to coordinate work on three pilot studies, both internally and with the wider consortium. This post holder will work specifically on two of the three pilot studies, relating to landscape ecology and air quality.
  - ▶ Pilot study 1: Support the other PDRA in implementing computation services for assessing landscape functional connectivity, by integrating data streams such as Citizen Science, administrative, satellite, socio-economic and IoT into an openly accessible analysis workflow to be tested in the context of Catalonia, Spain.
  - ▶ Pilot study 2: Work with the task leader (ECMWF) to evaluate the added value of integrating socio-economic data (e.g. traffic counts, energy production and transfer) and IoT data (from low-cost sensors) into existing models for estimating greenhouse gases and air quality.
  - ▶ Engage with a range of stakeholders to evaluate the completed pilot studies, and collate their feedback using the Geospatial User Feedback (GUF) model (<https://www.ogc.org/standards/guf>).
  - ▶ Contribute to design and implementation of the All Data 4 Green Deal information model, which will re-use and extend existing standard ontologies and vocabularies, including OGC standards whenever possible.
  - ▶ Contribute to dissemination activities to raise awareness and understanding of the activities and results among relevant target audiences (including decision- and policy-makers), and support community engagement.
  - ▶ Summarise project work in high-quality scientific reports suitable for publication in peer-reviewed academic journals.
  - ▶ Lead the writing and submission of deliverable reports for the European Commission and other project stakeholders.
  - ▶ Coordinate consortium partners on specific activities led by Aston University, and document progress against the workplan and project milestones.

### **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           |
|-------------------------------------|--|--------------------------------|
| <b>Education and qualifications</b> | First degree in any discipline and a PhD (or equivalent work experience) in Computer Science, informatics, environmental modelling or other relevant subject. Previous postdoctoral experience is not essential.   | Application form               |
| <b>Experience</b>                   | <p>Planning and conducting self-directed research up to doctoral level (or equivalent professional R&amp;D level)</p> <p>Engaging with stakeholders and eliciting requirements.</p> <p>Writing up/contributing to the write up of scientific research for high quality publications and/or reports.</p> <p>Presenting papers, posters and/or reports at seminars, conferences etc.</p> <p>Positive collaboration within and outside of candidate's immediate research team.</p> <p>Experience with some or all of the following (please specify and describe):</p> <ul style="list-style-type: none"> <li>• Open standards for data and metadata</li> <li>• APIs for sharing scientific data</li> <li>• Semantics (e.g. vocabularies, ontologies)</li> <li>• OGC web services</li> <li>• OGC APIs</li> <li>• Sensor Things API</li> <li>• Provenance documentation (for data or workflows)</li> <li>• Essential Variables framework</li> </ul> | Application form and interview |
| <b>Aptitude and skills</b>          | <p>High level capability for analysis and synthesizing information.</p> <p>Excellent verbal communication skills and the ability to deal with a wide range of people.</p> <p>Ability to organize own work with minimal supervision.</p>  | Application form and interview |

|  | Essential   | Method of assessment |
|--|---|----------------------|
|  | <p>Ability to present data and results in a clear and concise manner that is visually appealing.</p> <p>Ability to develop and maintain a research programme and to publish in high quality publications.</p> <p>A willingness to undertake further training as appropriate and to adopt new procedures as and when required.</p> |                      |

|                                     | Desirable  | Method of assessment           |
|-------------------------------------|--|--------------------------------|
| <b>Education and qualifications</b> | PhD in relevant field  | Application form               |
| <b>Experience</b>                   | <p>Practical experience with citizen science projects and their data.</p> <p>General understanding of IoT and the characteristics of its data.</p> <p>Practical experience with standards and vocabularies relevant to environmental data, e.g. OGC, INSPIRE, Darwin Core, EnvThes or others (please specify).</p> | Application form and interview |
| <b>Aptitude and Skills</b>          | Facilitating dialogue between technical and other domains, or across disciplines.  |                                |



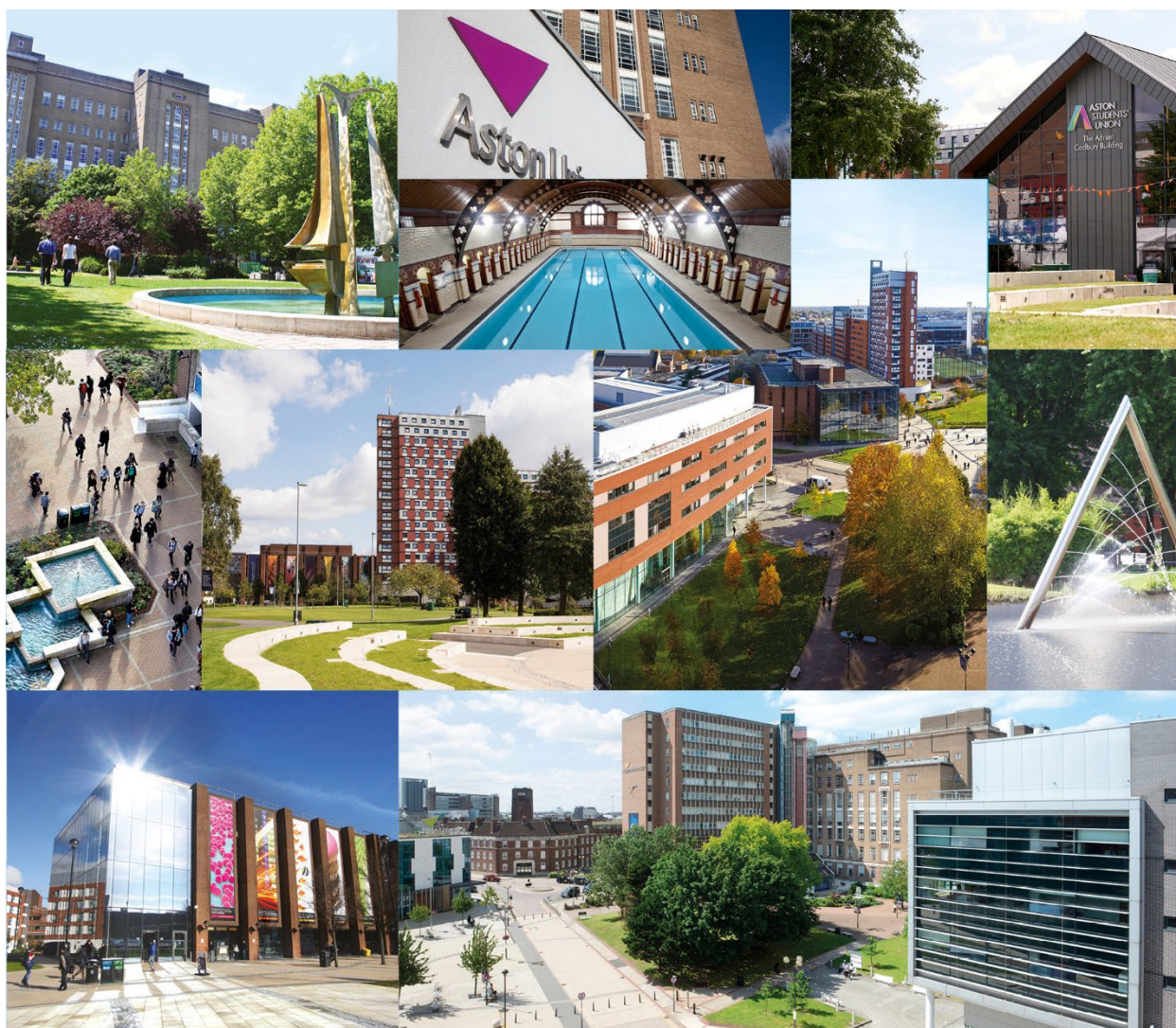
# How to apply

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

Applications should be submitted by 23:59pm 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 [jobs@aston.ac.uk](mailto:jobs@aston.ac.uk).



# Contact information

## Enquiries about the vacancy:

Name: Lucy Bastin

Job Title: Reader in Computer Science

Email: [l.bastin@aston.ac.uk](mailto:l.bastin@aston.ac.uk)

## Enquiries about the application process, shortlisting or interviews:

Recruitment Team via [jobs@aston.ac.uk](mailto:jobs@aston.ac.uk) or 0121 204 4500.

# 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 applying for is listed an exception under the act.

## Eligibility to work in the UK:

### New immigration system from 1 January 2021

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 who were not resident in the UK before 31 December 2021 will need to get a visa in advance.

You can find more information [here](#)

Candidates should check their eligibility to enter or remain in the UK in advance of making any job application via the [UKVI website](#). 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 visa 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>

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gets real.**