



OLLSCOIL NA GAILLIMHE  
UNIVERSITY OF GALWAY



HR EXCELLENCE IN RESEARCH

**Postdoctoral Researcher – AI-Driven Environmental Dataspaces**  
**Data Science Institute (DSI)**  
**Ref. No. 011708**

**JOB ADVERTISEMENT**

The Analytics for Sustainable Policy towards Environment and Climate Transition (ASPECT) Unit based at the Data Science Institute, University of Galway, Ireland are inviting applications from suitably qualified candidates for a full-time, fixed-term position as a Post Doctoral Researcher.

This position is funded by the Environmental Protection Agency (EPA) and the EU and is available for twelve months.

The successful candidate will work primarily on the SMART-Sinks project, a novel and ambitious EPA-funded research initiative. SMART-Sinks aims to design and develop a novel, AI-driven environmental dataspace that enables integrated, real-time monitoring and forecasting of peatland carbon sink stability and vitality across Ireland. By integrating multimodal data (satellite imagery, IoT sensor networks, climate records, and ecological data) into a FAIR-compliant digital environment, the project will empower data-informed decision-making for climate resilience, restoration prioritization, and policy compliance. The project is a collaboration between the University of Galway (Insight Centre), DCU, and UL, and will work closely with the EPA. The candidate will also work on other related projects within DSI and the ASPECT unit including PalusDemos, SMACC+, WaterLANDS, WildE, Multi-Peat, and ResNRJwater.

**Salary:** Postdoctoral Researcher salary scale €46,805 - €59,654 per annum, (subject to the project's funding limitations), and pro rata for shorter and/or part-time contracts.

The default position for all new public sector appointments is the 1st point of the salary scale. This may be reviewed, and consideration afforded to appointment at a higher point on the payscale (subject to the project's funding limitations), where evidence of prior years' equivalent experience is accepted in determining placement on the scale above point 1, subject to the maximum of the scale. ([Research Salary Scales - University of Galway](#))

**Closing date for receipt of applications is 17:00 (Irish Time) on 10/04/2026. It will not be possible to consider applications received after the closing date.**

**\*Please review full job description for further details and essential requirements.**

**JOB DESCRIPTION**



The successful candidate will play a central role in designing and implementing the core dataspace infrastructure for the SMART-Sinks project. The candidate will be responsible for architecting a FAIR-compliant dataspace, AI-ready platform that integrates heterogeneous environmental data streams. This position offers a unique opportunity to work at the intersection of dataspace, data engineering, semantic technologies, and environmental science, contributing directly to Ireland's climate action goals. The work will also involve other projects in the unit in this area of expertise where crossovers are likely.

**Duties:**

- Lead under the supervision of the Principal Investigator, the design, development, and implementation of the SMART-Sinks FAIR-compliant environmental dataspace.
- Architect and implement data pipelines for the ingestion, harmonization, and integration of multimodal datasets, including satellite imagery (Copernicus), IoT sensor data, climate records data, and ecological databases.
- Develop and apply semantic data models and ontologies to ensure data interoperability and machine-readability, following open standards (e.g., GAIA-X, IDSA guidelines).
- Implement robust data management and version control strategies to ensure data quality, provenance, and reproducibility.
- Collaborate closely with the Aspect unit and work AI/ML to prepare and serve data for training and validating predictive models.
- Contribute to the development of the project's Decision Support System (DSS) by providing robust data APIs and services
- Engage with project partners (DCU, UL) and stakeholders (EPA) to understand data requirements and ensure the dataspace meets end-user needs.
- Author high-impact research papers for high reputation peer-reviewed journals and IEEE international conferences.
- Participate in the preparation of technical reports, project deliverables and milestones.
- Provide input to the Aspect Unit team projects including Palus Demos, SMACC+, WaterLANDS, WildE, Multi-Peat, and ResNRJwater.
- Writing proposals for national, EU and international funding
- Any other duties assigned commensurate to this level of post

**ELIGIBILITY REQUIREMENTS**

**Essential Requirements:**

- **PhD** in Computer Science, Data Science, Informatics, or a closely related discipline.
- **Proven experience** in designing and implementing Dataspace including eclipse dataspace components, CKAN, CKAN API, DCAT-API, PostgreSQL, CKAnext-datapusher.



- **Strong programming skills** in Python with a strong focus on handling heterogeneous data, and experience in data manipulation libraries (e.g. Pandas, NumPy) and workflow management tools.
- **Demonstrated knowledge** of semantic web technologies, including ontology development (e.g., OWL, RDFS), Agentic AI, GraphDB, knowledge graphs, and querying with SPARQL.
- **Experience working with** and implementing FAIR dataspace principles.
- **Excellent publication record** in high reputation journals such as transaction (preferable), and high-quality Journals and IEEE conferences.

#### Desirable Requirements:

- Familiarity with cloud computing platforms (e.g., AWS, Azure, GCP) and containerization technologies (e.g., Docker, Kubernetes).
- Experience in building data pipelines for machine learning applications (MLOps).
- Knowledge of Image and IoT data and handling time-series data.
- An interest in environmental science, climate modelling, or earth observation.
- Experience with data governance, data privacy, and security in data-sharing platforms via Dataspace.
- Ability to travel

## CONTINUING PROFESSIONAL DEVELOPMENT

#### Continuing Professional Development/Training:

Researchers at University of Galway are encouraged to avail of a range of training and development opportunities designed to support their personal career development plans. University of Galway provides continuing professional development supports for all researchers seeking to build their own career pathways either within or beyond academia. Researchers are encouraged to engage with our Researcher Development Centre (RDC) upon commencing employment - see [HERE](#) for further information.

## FURTHER INFORMATION/LINKS

- **TO APPLY:** [Search Current University of Galway vacancies](#). Applications must be submitted online.
  - [How to apply guide](#)
- For informal enquiries, please contact **Saeed Alsamhi**, Email [saeed.alsamhi@universityofgalway.ie](mailto:saeed.alsamhi@universityofgalway.ie)
- [University's Strategic Plan](#)
- [Working in Research at University of Galway](#)
- [Moving to Ireland \(Euraxess\)](#)
- [Applicant Information](#)
- We reserve the right to re-advertise or extend the closing date for this post.
- University of Galway is an equal opportunities employer.



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- All positions are recruited in line with Open, Transparent, Merit (OTM) and Competency based recruitment.

