Postdoctoral Researcher – Flood Forecasting

School of Engineering

Ref. No. 010849

JOB ADVERTISEMENT

Applications are invited from suitably qualified candidates for a full-time fixed term position as a Postdoctoral Researcher with Civil Engineering at the University of Galway, Ireland.

This position is funded by Taighde Éireann – Research Ireland and is available immediately. The currently available funding will support a full-time 1-year (12 month) Postdoctoral position, with potential for a further 1-year (12 month) extension, subject to funding.

Extensive research exists demonstrating that flooding has increased in frequency in recent decades, fuelling concern that climate change is already influencing flood risk. Projected increases in rainfall, sea level and storm winds are likely to escalate the risk of flooding in the future. The current situation with floods around the globe already threatens sustainable developments, while floods in future are expected to also alter exposure to climate risks, which may potentially reinforce inequalities, and the reality is that they continue exposing large number of lives in risk. Additionally, the consequences of flood events are widespread and impact negatively many SDGs. As such, there is an urgent need to better understand the dynamics of floods and to provide adequate measures and methods to manage flood risks effectively and efficiently today and for the future. In this context, the aim of this research project is to develop and test a novel flood forecasting and decision-making system for an urban area subject to frequent compound floods.

Salary: Postdoctoral Researcher salary scale €44,846 - €57,332 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 15th January 2025. It will not be possible to consider applications received after the closing date.

*Please review full job description for further details and essential requirement
JOB DESCRIPTION

Job Description:
The successful candidate will be based at the University of Galway and contribute towards a recently awarded project in the field of flood modelling and resilient development. The project is aimed at

building a process- and model-based flood forecasting system using the latest developments in engineering, IT and social sciences. The successful candidate will work in a multidisciplinary team with colleagues in Civil Engineering, the Centre for Economic Research on Inclusivity and Sustainability (CERIS) and the Data Analytics at the University of Galway.

Duties:
- Conduct research (both independently and as part of a team) in the area of hydrological and hydrodynamic modelling of floods.
- Perform statistical analysis of extreme events.
- Develop machine learning-based forecasting tools.
- Produce output maps in GIS environment.
- Contribute to the writing of scientific papers and reports for international journals and progress reporting to other researchers and industry partners.
- Assist with the coordination of research activities and actively contribute to research outputs to meet project milestones.
- Participate in and/or present at conferences and/or workshops relevant to the project as required.
- Assist with the supervision of PhD and research students.
- Any other duties assigned commensurate to this level of post.

ELIGIBILITY REQUIREMENTS

Essential requirements:

- PhD (or be near to completing a PhD – Thesis submitted and awaiting Viva prior to shortlisting) in mathematics, physics, oceanography, engineering or related area.
- Demonstrated experience with numerical models (e.g. hydrodynamic, hydrological models).
- Demonstrated experience in statistical/probabilistic analysis.
- Demonstrated experience in machine learning and data mining.
- Demonstrated ability to work in a team, collaborate across disciplines and build effective relationships.
- Demonstrate excellent communication skills in English.

Desirable requirements:

- Experience in working with hydrodynamic/hydraulic/hydrology codes.
- Experience in working with NWP models.
- Programming skills sufficient to adapt and/or modify existing models.
- Proven track record in using one or more scripting languages, e.g. MATLAB, Python or similar.
- Competence in a GIS environment.
- Demonstrated ability to conduct independent research with limited supervision.
- Demonstrated track record of publications and conference presentations relative to opportunity.

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.
    - o How to apply guide

- For informal enquiries, please contact Dr. Indiana Olbert at Indiana.olbert@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.

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