Postdoctoral Researcher - Foundation Models and Machine Learning

Insight SFI Research Centre for Data Analytics, Data Science Institute

Ref. No. 010309

JOB ADVERTISEMENT

Applications are invited from suitably qualified candidates for a full-time, fixed term position as a Postdoctoral Researcher with Insight SFI Research Centre for Data Analytics at the University of Galway, Ireland.

This position is part-funded through the Insight Centre for Data Analytics, Adra-e (https://adra-e.eu/), and DSSC (https://dssc.eu/) projects funded by the European Union and is available immediately for 18 months.

This position is highly interdisciplinary as it supports the advancement of Foundation Model and AI in Europe on an unprecedented scale with a European approach to data sharing and AI that optimizes economic benefits combined with European values.

Salary: Postdoctoral Researcher salary scale €43,907 - €56,202 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 1st May 2024. 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 expected to perform research and development in the area of Foundation Models, data space, and AI within an established group of researchers and PhD students with expertise in data and knowledge engineering, data analytics and large-scale data processing, as well as a long tradition of applying this expertise in various domains, including healthcare, education, sustainability, smart cities, privacy and digital humanities.

The successful candidate will have the opportunity to shape the data and AI landscape within Europe, research the design and development of Foundation Models for data spaces, neuro-symbolic AI and

support stakeholder awareness and education. You will participate in cross-consortium meetings with academic and industry project partners and engage within external events with stakeholders in the European Data and AI Ecosystems.

The successful candidates will be based in the Insight SFI Research Centre for Data Analytics at the University of Galway. The candidates will be supported in their professional development, be able to avail of a range of career level focussed training opportunities, have the potential to publish research findings in leading journals and international events.

Duties:
- Research, design, and develop foundation models in the field of artificial intelligence, based on the latest advancements.
- Fine-tune and optimize existing foundation models to ensure performance and efficiency, enhancing their applicability across a wide range of domains.
- Conduct research and develop innovative solutions using Neuro-Symbolic AI (the integration of symbolic and sub-symbolic AI techniques encompassing knowledge graphs, semantic reasoning, machine learning, computer vision, language models, etc.)
- Establish principles and tools to support best practices for foundational models and data spaces and AI in collaboration with the European data and AI communities.
- Engage in a cutting-edge research endeavour that explores the convergence of data spaces and AI.
- Create guidelines and resources to promote optimal approaches for data spaces and AI, in cooperation with European data and AI communities.
- Working with the team/independently to develop a proof of concept for validating research ideas/outcomes.
- The project will involve international travel to consortium meetings and presentations of research at international conferences.
- Produce top-quality journal and conference publications in collaboration with students and PIs.
- Assist in the attraction of funding.
- Provide support and advice to PhD students working on similar topics.
- Assist the Principal Investigator in overseeing software and system development for various projects in the area of data spaces and AI.
- Design and implementation of industrial prototype demonstrators.
- Participate in Centre activities, including industry showcases, annual reviews and industry and agency visits.
- Any other duties assigned commensurate to this level of post.

ELIGIBILITY REQUIREMENTS

Essential Requirements:
- PhD Degree in computer science or a closely related discipline.

- A proven track record of research performance, including publication and dissemination of results and collaborations.
- Strong expertise in Artificial Intelligence, including deep learning, reinforcement learning, computer vision or natural language processing.
- Proficiency in machine learning libraries, data pre-processing, and model evaluation techniques
- Excellent communication and analytical skill.

Desirable Requirements:
- Understanding of Neuro-Symbolic AI, symbolic reasoning, and knowledge representation.
- Experience in developing and fine-tuning foundation models such as ChatGPT, BERT, RoBERT, Dall-E 2
- Experience in research projects and academic-Industrial research collaborations.
- Previous experience working on European Union (EU) projects will be an advantage.

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:** Jobs - University of Galway. Applications must be submitted online.
    - Internal Applicant - How to apply guide
    - External Applicant - How to apply guide

- For informal enquiries, please contact Christiane Leahy-Coen christiane.leahy-coen@universityofgalway.ie and Rafiqul Haque, akmrafiqul.haque@universityofgalway.ie / rafiqul.haque@insight-centre.org

- University's Strategic Plan

- Working in Research at University of Galway

- Moving to Ireland (Euraxess)

- 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.