



JOB DESCRIPTION

Research Software Engineer Analyst Programmer I Insight SFI Research Centre for Data Analytics Fixed Term Contract up to 12 Months

Background

The Insight SFI Research Centre for Data Analytics (<http://www.insight-centre.org>) is an SFI funded Research Centre which brings together researchers from University College Dublin, NUI Galway, University College Cork, and Dublin City University, as well as other partner institutions, Trinity College Dublin (TCD), University of Limerick (UL), Maynooth University (MU) and Tyndall National Institute. It creates a critical mass of more than 400 researchers from Ireland's leading ICT clusters to carry out research on a new generation of data analytics technologies in a number of key application domain areas, such as Health and Human Performance, Smart Communities, Internet of Things, Enterprise and Services and Sustainability and Operations.

The €150m Centre is funded by Science Foundation Ireland and a wide range of industry and European Union partners. Insight's research focus encompasses a broad range of data analytics technologies from machine learning, decision analytics and social network analysis to linked data, recommender systems and the sensor web. Together, with more than 220 partner companies, Insight researchers are solving critical challenges in the areas of Connected Health and the Discovery Economy.

The Project

The proposed project is collaborative between the Insight SFI Research Centre for Data Analytics at DCU and the Site Reliability Engineering (SRE) lab at Huawei Ireland Research Centre in Dublin. The overarching goal of the project is to evaluate the scalability of various microservices in the Huawei cloud system with an intention to devise intelligent prediction models and detection algorithms using machine learning and deep learning techniques to effectively assess system performance when cloud-based services go beyond their limits in terms of resource consumption. The developed algorithms, models and tools will be integrated and implemented with links to real-world production system in Huawei to further enhance reliability and scalability of its cloud services.

The Role

This position is for a research software engineer who will be recruited on a fixed term contract basis to be responsible for the research design, model and tool development, performance evaluation and experimental validation of data for Huawei cloud. The researcher will be working closely with a full-time research assistant who will also be recruited for the whole cycle of the project. Both researchers will collaborate deeply with the PI and the world-leading experts in the Huawei teams.

Principle Duties and Responsibilities

Specific duties include:

- Develop automated testing frameworks for scalability assessment of microservices.
- Develop AI-learning models for prediction of workload and resource consumption.
- Evaluate algorithms and models using the datasets generated from both simulation and production environments.
- Deploy algorithms/models for continuous assessment and performance enhancement.
- Provide support and advice to the research assistant working on the project.
- Assist with presentation and demonstrate research outcome to the industry partner.
- Carry out documentation and reports for project deliverables in a timely manner.
- Produce journal and conference publications, in collaboration with the PI and the industry partner.
- Participate in Insight Centre activities, including industry showcases, annual reviews and industry and agency visits to the Insight labs.
- Engage in administrative work associated with the programme of research as necessary.
- Engage in other tasks relevant to successfully implementing the project.

Minimum Criteria

The candidate must have the following:

- A degree or equivalent (NFQ Level 7) in an appropriate area such as Computer Science, Software Engineering, Electronic Engineering or a related technical discipline.
- Two years' relevant experience at an appropriate level, with strong software and programming skills.
- Relevant experience in data processing, modelling and analytics using machine learning and deep learning.

In addition to the above, it is desirable that the candidate possess a subset of the following skills;

- Excellent written and oral proficiency in English (essential).
- Excellent written and verbal communication and interpersonal skills (essential).
- Proven ability to prioritize workload and work to strict deadlines.
- Ability to work in a team and to take responsibility to contribute to the overall success of the team.
- Strong problem solving abilities.
- Proven programming skills in two or more: Bash, Python, Java, JavaScript, SQL, Go.
- Experience in Docker, micro services, Kubernetes and other cloud-based technologies.
- Experience in processing and analysis of large datasets.
- Ability to debug and optimize code and automate routine tasks.
- Good knowledge of machine/deep learning techniques, packages and frameworks.
- PhD degree in computer science, maths, engineering or similar disciplines (preferable).
- Previous research experience in the ICT industry or European projects (preferable).
- Experience in using AI to analyse and forecast key site metrics (preferable).
- A postgraduate degree in Computer Science, Software Engineering, Electronic Engineering would be advantageous.

Additional Information

The successful candidate will be offered opportunities for developing their own career in a number of directions including support for conference/workshop travel, upskilling through Insight's continuous professional development in areas like research ethics and data privacy, student supervision and development and submission of their own research project proposals.

Essential Training

The postholder will be required to undertake the following essential compliance training: Orientation, Health & Safety and Data Protection (GDPR). Other training may need to be undertaken when required.