Research Centre	Insight SFI Research Centre for Data Analytics
Post Title	Postdoctoral Researcher in Safe and Trustworthy Artificial Intelligence in Medical Devices
Post Duration	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.

Research Career Framework

As part of this role the researcher will be required to participate in the DCU Research Career Framework (http://dcu.ie/hr/ResearchersFramework/index.shtml). This framework is designed to provide significant professional development opportunities to researchers and offer the best opportunities in terms of a wider career path.

DCU has a strong track record in attracting both Irish and European Union research funding under Horizon 2020 (and all previous Framework programmes), Marie Curie Actions and Erasmus. We offer a dynamic and internationally-focused environment in which you can advance your academic career.

The Project

Artificial intelligence is disrupting many sectors. One sector which can benefit significantly from AI but which is having difficulty in its adoption is the medical device sector. The inclusion of artificial intelligence into medical devices can bring challenges in terms of how it can be achieved in safe, accountable, trustworthy ways.

Entitled "**Safe and Trustworthy Artificial Intelligence in Medical Devices – a Regulatory-Friendly Framework**" this project is seeking a researcher who can leverage our pooled knowledge across Dublin City University (Insight), Dundalk IT and Arizona State University to translate AI, privacy and software processes into useable frameworks which industry can use to develop innovative safe and

secure medical devices. We are seeking to advance the development of healthcare technology in such a way as to improve industry's adoption of AI and regulators' capacity to support within their assessment process, the development of new medical devices which involve sophisticated AI.

The medical device industry has been identified, by the IDA, Enterprise Ireland and Science Foundation Ireland, as a key growth sector for the Irish economy. The value of AI in enhancing the performance of medical devices is well documented in academic research and clinical investigations however the regulatory context of AI especially in terms of trustworthiness and transparency assurances presents challenges to medical device manufacturers. We seek a postdoctoral researcher to join our team to help in addressing this problem.

The Role
We are seeking a postdoctoral researcher who will
- Develop a set of guidelines/frameworks that can be used as a reference by medical device manufacturers that aims to use data-driven AI algorithms by providing best practices in the context of a machine learning operations approach.
- Validate the framework using action research and obtain structured feedback from both academic and industry experts.
- Conduct case studies in a number of test companies to assess utility and practicality of the proposed frameworks

Principal Duties and Responsibilities
Please see Job Description for a full list of duties and responsibilities.

Minimum Criteria
The ideal candidate will have a PhD in Computer Science, Engineering or a related discipline with software and programming skills and relevant experience in software engineering processes.

Skills
- Excellent written and oral proficiency in English (essential).
- Excellent written and verbal communication and interpersonal skills.
- 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.

Candidates will be assessed on the following competencies:

Discipline Knowledge and Research skills – Demonstrates the ability to design and/or implement a substantial programme of research including initiating and leading new research programmes (for example by using critical judgement and an understanding of new research methodologies).

Understanding the Research Environment – Demonstrates a thorough understanding of the research environment both nationally and internationally, the ability to secure significant research funding and where relevant the ability to apply for intellectual property rights and/or patents for their research.

Communicating Research – Demonstrates excellence in communicating their research nationally and internationally (for example by publishing in high quality peer reviewed journals of

international standing and through invitation to participate in commercial research) and the ability to deliver teaching based on their own research.

Managing and Leadership skills – Successfully leads and manages research programmes including the management and supervision of a small research team and the financial management of research programmes.

Mandatory Training
The post holder will be required to undertake the following mandatory compliance training: Orientation, Health and Safety, Research Integrity and Intellectual Property and Data Protection training. Other training may need to be undertaken when required.

Additional Information
The successful candidates will be offered opportunities for developing their own careers 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.

Salary Scale:

IUA Postdoctoral Researcher Scale - €39,523 - €51,035

Appointment will be commensurate with qualifications and experience and in line with current Government pay policy

Closing date: 27th April 2022

For more information on DCU and benefits, please visit Why work at DCU?

Informal Enquiries in relation to this role should be directed to:
Professor Tomás Ward, Professor of Data Analytics, Dublin City University.
Email: Tomas.ward@dcu.ie

Please do not send applications to this email address, instead apply as described below.

Application Procedure:

Application forms are available from the DCU Current Vacancies website at
https://www.dcu.ie/hr/vacancies-current-vacancies-external-applicants (external applicants)

Applications should be submitted by e-mail with your completed application form to
hr.applications@dcu.ie

Please clearly state the role that you are applying for in your application and email subject line:
Job Ref: #RF1658 Postdoctoral Researcher in Safe and Trustworthy Artificial Intelligence in Medical Devices