Postdoctoral Researcher in Financial Portfolio Optimization
ADAPT Centre
Fixed Term up to 24 Months

Dublin City University

Dublin City University (DCU) is a leading innovative European University. It is proud to be one of the world's leading Young Universities and is among the world's top 2% globally. DCU is known as Ireland's University of Impact, with a mission to 'transform lives and societies' and focuses on addressing global challenges in collaboration with key national and international partners and stakeholders.

DCU has over 20,000 students in five faculties spread across three academic campuses in the Glasnevin-Drumcondra area of North Dublin. Thanks to its innovative approach to teaching and learning, the University offers a 'transformative student experience' that helps to develop highly sought-after graduates. DCU is currently No. 1 in Ireland for Graduate Employment Rate, and for graduate income (CSO).

DCU is a research-intensive University and is home to a number of SFI-funded Research Centres. The University participates in a range of European and international research partnerships. DCU is also the leading Irish university in the area of technology transfer as reflected by licensing of intellectual property.

As a 'People First' institution, DCU is committed to Equality, Diversity and Inclusion - a University that helps staff and students to thrive. The University is a leader in terms of its work to increase access to education and is placed in the world's Top 10 for reducing inequalities in the Times Higher Education Impact Rankings.

Research Career Framework

As part of this role the researcher will be required to participate in the DCU Research Career Framework. This framework is designed to provide significant professional development opportunities to Researchers and offer the best opportunities in terms of a wider career path.

Overview of the Department

ADAPT, the world-leading SFI Research Centre for AI-Driven Digital Content Technology, brings leading academics, researchers and industry partners together to deliver excellent science, engage the public, develop novel solutions for business across all sectors and enhance Ireland's international

reputation. Coordinated by Trinity College Dublin and co-hosted by Dublin City University, ADAPT's research vision is to pioneer new forms of proactive, scalable, and integrated AI-driven Digital Media Technology that empower individuals and society to engage in digital experiences with control, inclusion, and accountability with the long-term goal of a balanced digital society by 2030. The Adapt Centre maintains a large research infrastructure at DCU with 68 dedicated researcher desks/stations and an extensive academic supervisory network and administration team. While at the Adapt Centre, the researcher will be facilitated by the provision of a dedicated research station, personal computing equipment and access to the extensive computing and professional resources of the Adapt Centre. NAME will be provided with access to the Adapt High Performance Computing Cluster, a 26 CPU and 56 GPU computing cluster with 7TB RAM and 50TB of disk space.

The research would be conducted in a sub-group which is part of the *Value & Risk* (V&R) Challenge of the *Transparent Data Governance* strand of ADAPT. V&R focuses on predictive behavioural and risk analysis that is at the core of this project. The research sub-group under the co-Principal Investigators has a track record in delivering innovations in the area of Quantitative Finance. As part of the ADAPT Centre, they were until recently (2018-22) funded as part of the FinTech Fusion Spoke (a €4M Euro co-fund involving Industry-Academia) and led out the InsureTech Theme of this Spoke.

Much of the recent research in the group has involved co-movements of cryptocurrencies, although other (InsureTech-related) research has to do with: the estimation of losses to insurance due to ill-health. The research team are also vastly experienced in working with financial data and have done multiple research projects in similar areas. It is envisaged that this project will involve optimisation of Financial Portfolios across a range of asset classes.

Role Profile

The successful candidate will assume responsibility for overseeing the successful implementation of the project. This includes:

- Day to day management of the project.
- Liaising with all project stakeholders.
- Report project progress to all parties at the agreed intervals including details in core KPIs.
- such as adherence to schedule, budget tracking etc.

Central to the project will be disseminating research findings internally to the relevant stakeholders and externally to the wider public, in the hope of informing future policy and practice.

Principal Duties and Responsibilities

Specific duties include:

- Management and implementation of the assigned research programme.
- Produce top quality journal and conference publications, in collaboration with the co-PIs.
- Engage in teaching and support to postgraduate students working on similar topics.
- Carry out administrative work associated with the programme of research as necessary.
- Other tasks relevant to successfully implementing the assigned research programme.
- Liaise with both external and internal stakeholders, including academics, undergraduate and postgraduate students, external supervisors, community stakeholders and schools.
- Preparation of project outputs, interim and final reports as required by the project schedule.
- Deliver research outputs according to project schedules.

- Other tasks relevant to successfully implementing the assigned research programme.
- Attend and present results at project progress meetings.

Qualifications, Skills and Experience Required

The ideal candidate should have a PhD in Quantitative Finance, Financial Mathematics or Econophysics. In addition, it is desirable that the candidate has experience in these methods for Portfolio Optimization or Algorithmic Trading.

The candidate will also have:

- Excellent communication, interpersonal and organisational skills, be able to take initiative and work to deadlines, and the ability to work effectively as part of an interdisciplinary team.
- Excellent research and evaluation skills, including experience in qualitative and quantitative methods.
- Experience in project management and experience of working with external organisations.
- Strong leadership and influencing skills and be capable of exercising judgement and making decisions on matters related to the project.
- A track record of effective networking and building strong working relationships within
- a cross-disciplinary team.

Candidates will be assessed on the following competencies:

Discipline knowledge and Research skills – Demonstrates knowledge of a research discipline and the ability to conduct a specific programme of research within that discipline.

Understanding the Research Environment – Demonstrates an awareness of the research environment (for example funding bodies) and the ability to contribute to grant applications.

Communicating Research – Demonstrates the ability to communicate their research with their peers and the wider research community (for example presenting at conferences and publishing research in relevant journals) and the potential to teach and tutor students.

Managing & Leadership skills - Demonstrates the potential to manage a research project including the supervision of undergraduate students.

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.