

Post Specification

Post Title:	Research Fellow (Post Doc) in Data Science
Post Status:	Specific purpose contract
Department/School:	School of Computer Science and Statistics
Location:	ADAPT SFI centre and the German Research Center for Artificial Intelligence (DFKI), Kaiserslautern, Germany
Reports to:	Dr David Selby, Professor Mark Little and Professor Lucy Hederman
Salary:	This appointment will be made on the SFI Level 2 Research Fellow salary scale (March 2023) (€42,032 - €48,427) on a point commensurate with experience, plus funding for additional training and conference travel
Closing Date and Time:	3/7/23
Start Date for Post:	Commencing once suitable candidate identified, but no later than Oct 31 st 2023

Post Summary

Applications are invited for a talented and motivated data science engineer to join a collaborative project between the Trinity Kidney Centre (www.thkc.ie), the School of Computer Science and Statistics (<https://www.scss.tcd.ie/>), the ADAPT research centre (www.adaptcentre.ie) and the German Research Centre for Artificial Intelligence, DFKI (<https://www.dfki.de/en/web/>), helping to bridge the gap between artificial intelligence and cutting-edge medical research. You will be responsible for developing and maintaining data science pipelines that enable reproducible and effective statistical modelling of rare diseases from sensitive electronic health record data, and in writing and extending statistical software to implement modern machine learning methods. The work will focus on modelling and maximising data quality and alignment with relevant data standards. The successful candidate will work at Trinity College while being jointly supervised by researchers from DFKI.

Background to the Post

The successful candidate will work with Professors Mark Little

(www.tcd.ie/medicine/thkc/research/chronic.php), Lucy Hederman

(<https://www.scss.tcd.ie/Lucy.Hederman/>) and David Selby

(<https://www.dfki.de/en/web/about-us/employee/person/dase01>; <https://selbydavid.com/>).

The project is linked to an ERA PerMed-funded consortium called PARADISE (Personalisation of relapse risk in autoimmune disease), which seeks to generate predictive algorithms for relapse in the rare autoimmune disease ANCA vasculitis. The proposed project leverages an extensive rare disease registry and biobank (www.tcd.ie/medicine/thkc/research/rare.php) to generate a longitudinal granular phenotype which we aim to link to biomarker, environmental and wearable device data streams. The post will be primarily physically based in Dublin focusing on development of methods for the analysis of rare autoimmune disease data, supported by an interdisciplinary team including statisticians, clinicians, data scientists and patient partners to extract insights from a longitudinal patient dataset. The work will be remotely supervised by the Data Science and its Applications research department of the DFKI, based in Kaiserslautern, Germany. Part of the data science engineer's time will also be spent on development of statistical software for the extension of modern machine learning models to complex time-to-event or high-dimensional medical data, with the opportunity for secondments in Kaiserslautern.

Background to the ADAPT centre

We live in a world of global digital connectivity where individuals, communities and businesses are communicating globally at incredible speed, in enormous volumes, across the world's languages and over an ever-increasing range of devices. ADAPT's vision is to leverage this torrent of digital content to enable unprecedented levels of global engagement among people, companies and communities. This is achieved through a unique collaboration between world-class research groups in multilingual natural language processing (NLP), multimedia content analysis and transformation, personalisation and multimodal interaction. Within ADAPT and its affiliated group of international and commercialisation projects, these posts will deliver the advances in linked data and semantic technologies that are key to efficiently manage the content, language and knowledge assets that underpin intelligent global customer engagement.

Background to DFKI

The German Research Centre for Artificial Intelligence GmbH (DFKI) was founded in 1988 as a non-profit public-private partnership (PPP). The DFKI combines top scientific performance and business-related value creation with social appreciation. The DFKI has been researching AI for humans for over 30 years and is oriented towards social relevance and scientific excellence in the decisive future-oriented research and application areas of artificial intelligence. In the international scientific world, the DFKI is one of the most important "Centres of Excellence". Within the DFKI, the Data Science and its Applications research group is a constellation of researchers who—while geographically and institutionally spread—are united under the supervision of Professor Sebastian Vollmer, with a shared goal of advancing data science methods and tools, and using them across industrial and socially-important applications.

Standard Duties and responsibilities of the Post

- The post holder will be a data scientist required to undertake research on projects developing algorithms linking multi-modal assessments of immune system activation and clinical status.
- Implement machine learning algorithms and data processing pipelines as reusable, modular software packages following best programming practices.
- Disseminate research findings with the preparation and publication of results in leading international journals.
- Attend and present research internally and at national and international conferences.
- Participate and assist/train colleagues in related research projects
- Prepare reports and professionally engage with academic and industrial partners.
- Leadership within the PARADISE consortium and DFKI, including helping to run symposia, group meetings and guidance of junior team members.

Person Specification

Qualifications

PhD in data science, computer science, biostatistics, computational biology, machine learning or a similar field.

Knowledge & Experience

- Appreciation for challenges of longitudinal analysis of sparse, real-world patient data

- A solid understanding of data science pipelines, version control, software and data testing and best practices
- An interest in reproducibility, transparency, data ethics, algorithmic fairness and other aspects of responsible data science
- Awareness of concepts such as personalized medicine, hybrid machine learning or data augmentation
- Ability to balance technical requirements with making complex concepts understandable to stakeholders and collaborators
- The ability to work independently on a project, as well as co-operatively within a team, is essential.

Skills & Competencies

- Proficient in R (essential) and at least one of the Python or Julia programming languages (desirable), with experience in package development
- Must be a well-organized data scientist with
 - excellent writing, communication and interpersonal skills
 - Non-native English speakers require at least IELTS 6.5 (with at least 6 in all components) or equivalent.

Informal enquiries to:

Professor Mark Little: mlittle@tcd.ie

To apply please email a brief cover letter describing relevant experience and a PDF copy of your CV along with names and contact information for 2 referees to robin.odriscoll@adaptcentre.ie.

Further Information for Candidates

URL Link to School: <http://www.medicine.tcd.ie/>

URL Link to Research Group: <http://www.medicine.tcd.ie/thkc/research/>

URL Link to Human Resources: <http://www.tcd.ie/hr/>

Trinity College Dublin, the University of Dublin

Trinity is Ireland's leading university and is ranked 98th in the world (QS World University Rankings 2023). Founded in 1592, the University is steeped in history with a reputation for excellence in education, research and innovation.

Located on an iconic campus in the heart of Dublin's city centre, Trinity has 18,000 undergraduate and postgraduate students across our three faculties – Arts, Humanities, and Social Sciences; Engineering, Mathematics and Science; and Health Sciences.

Trinity is ranked as the 17th most international university in the world (Times Higher Education Rankings 2020) and has students and staff from over 120 countries.

The pursuit of excellence through research and scholarship is at the heart of a Trinity education, and our researchers have an outstanding publication record and strong record of grant success. Trinity has developed [19 broad-based multidisciplinary research themes](#) that cut across disciplines and facilitate world-leading research and collaboration within the University and with colleagues around the world. Trinity is also home to 5 leading flagship research institutes:

- Trinity Biomedical Sciences Institute (TBSI)
- Trinity College Institute of Neuroscience (TCIN)
- Trinity Translational Medical Institute (TTMI)
- Trinity Long Room Hub Arts and Humanities Research Institute (TLRH)
- Centre for Research on Adaptive Nanostructures and Nanodevices (CRANN)

Trinity is 1st in Europe for Producing Entrepreneurs for the 7th year in a row and Europe's only representative in the world's top-50 universities (Pitchbook 2021-2022).

Trinity is home to the famous Old Library and to the historic Book of Kells as well as other internationally significant holdings in manuscripts, maps and early printed material. The Trinity Library is a legal deposit library, granting the University the right to claim a copy of every book published in Ireland and the UK. At present, the Library's holdings span approximately 6.5 million printed items, 400,000 e-books and 150,000 e-journals. With over 120,000 alumni, Trinity's tradition of independent intellectual inquiry has produced some of the world's finest, most original minds including the writers Oscar Wilde and Samuel Beckett (Nobel laureates), the mathematician William Rowan Hamilton and the physicist Ernest Walton (Nobel laureate), the political thinker Edmund Burke, and the former President of Ireland Mary Robinson. This tradition finds expression today in a campus culture of scholarship, innovation, creativity, entrepreneurship and dedication to societal reform.

Rankings

Trinity College Dublin is the top ranked university in Ireland. Using the QS methodology we are ranked 98th in the world and using the Times Higher Education World University Ranking methodology we are 146th in the World.

- Trinity College Dublin is Ireland's No.1 University (QS World University Ranking 2023, Times Higher Education Rankings 2022)
- Trinity is ranked 98th in the World (QS World University Ranking 2023)
- Trinity is ranked No.1 in Europe for Producing Entrepreneurs for the 7th year in a row Pitchbook 2021-2022

Full details are available at: www.tcd.ie/research/about/rankings.

The Selection Process in Trinity

The Selection Committee (Interview Panel) may include members of the Academic and Administrative community together with External Assessor(s) who are expert in the area. Applications will be acknowledged by email. If you do not receive confirmation of receipt within 1 day of submitting your application online, please contact the named hiring lead on the job specification immediately and prior to the closing date/time.

Given the degree of co-ordination and planning to have a Selection Committee available on the specified date, the University regrets that it may not be in a position to offer alternate selection dates. Where candidates are unavailable, reserves may be drawn from a shortlist. Outcomes of interviews are notified in writing to candidates and are issued no later than 5 working days following the selection day.

In some instances, the Selection Committee may avail of telephone or video conferencing. The University's selection methods may consist of any or all of the following: Interviews, Presentations, Psychometric Testing, References and Situational Exercises.

It is the policy of the University to conduct pre-employment medical screening/full pre-employment medicals. Information supplied by candidates in their application (Cover Letter and CV) will be used to shortlist for interview.

Applications from non-EEA citizens are welcomed. However, eligibility is determined by the Department of Business, Enterprise and Innovation and further information on the Highly Skills Eligible Occupations List is set out in Schedule 3 of the Regulations <https://dbe.gov.ie/en/What-We-Do/Workplace-and-Skills/Employment-Permits/Employment-Permit-Eligibility/Highly-Skilled-Eligible-Occupations-List/> and the Ineligible Categories of Employment are set out in Schedule 4 of the Regulations <https://dbe.gov.ie/en/What-We-Do/Workplace-and-Skills/Employment-Permits/Employment-Permit-Eligibility/Ineligible-Categories-of-Employment/>. Non-EEA candidates should note that the onus is on them to secure a visa to travel to Ireland prior to interview. Non-EEA candidates should also be aware that even if successful at interview, an appointment to the post is contingent on the securing of an employment permit.



Equal Opportunities Policy

Trinity is an equal opportunities employer and is committed to employment policies, procedures and practices which do not discriminate on grounds such as gender, civil status, family status, age, disability, race, religious belief, sexual orientation or membership of the travelling community. On that basis we encourage and welcome talented people from all backgrounds to join our staff community. Trinity's Diversity Statement can be viewed in full at <https://www.tcd.ie/diversity-inclusion/diversity-statement>.

Pension Entitlements

This is a pensionable position, and the provisions of the Public Service Superannuation (Miscellaneous Provisions) Act 2004 will apply in relation to retirement age for pension purposes. Details of the relevant Pension Scheme will be provided to the successful applicant.

Applicants should note that they will be required to complete a Pre-Employment Declaration to confirm whether or not they have previously availed of an Irish Public Service Scheme of incentivised early retirement or enhanced redundancy payment. Applicants will also be required to declare any entitlements to a Public Service pension benefit (in payment or preserved) from any other Irish Public Service employment.

Applicants formerly employed by the Irish Public Service that may previously have availed of an Irish Public Service Scheme of Incentivised early retirement or enhanced redundancy payment should ensure that they are not precluded from re-engagement in the Irish Public Service under the terms of such Schemes. Such queries should be directed to an applicant's former Irish Public Service Employer in the first instance.

Application Procedure

Application Procedure

Applicants should submit a full Curriculum Vitae to include the names and contact details of 2 referees (including email addresses), to:-

Robin O'Driscoll
robin.odriscoll@adaptcentre.ie



Trinity College Dublin

Coláiste na Tríonóide, Baile Átha Cliath

The University of Dublin



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**DIVERSITY
CHAMPIONS**

