

Post Specification

Post Title:	Postdoctoral Researcher
Post Status:	1 year contract
Funded by:	Science Foundation Ireland (SFI-NSFC Partnership programme)
Location:	Trinity College Dublin, School of Computer Science & Statistics
Salary:	Commensurate with experience and achievement (salary scale range from new postdoc up to 6 years' experience)
Closing Date:	until filled, final deadline March 10th 2022

Open position

One Postdoctoral Researcher position is open on SFI-NSFC funded SATORI project – **Smart Networking in the Era of AI**. Successful candidate, based on their background and interests, will work on one of the two streams within the project: **AI for Communications in Smart Cities** or **AI for Communications in Moving Networks**.

Within Smart Cities strand we develop techniques and algorithms that utilize urban sensor data to optimize smart city services and performance of the underlying communication networks, e.g., intelligent energy management in IoT networks, and optimisation of data analytics services,. Within Moving Networks strand we address integrating mobility information and C-V2X to improve network management and optimize services utilizing vehicular networks, as well as address unmanned aerial vehicle (drone) connectivity.

The position will be based in the CONNECT research centre at Trinity College Dublin, Ireland. The researcher will also be part of the School of Computer Science and Statistics in TCD. The position will be under the direction of **Dr. Ivana Dusparic**. For informal inquiries please contact Ivana.Dusparic@tcd.ie.

Required Qualifications

The candidate must have a PhD in Computer Science, Computer Engineering, Electronic Engineering, or a related field. The post is applicable to both new or experienced PhD holders, and salary will be commensurate with experience and achievement. The successful candidate will join a team of highly skilled and innovative researchers in novel artificial intelligence techniques and their applications.



Essential Knowledge & Experience

- Experience in the development and use of reinforcement learning (RL) algorithms
- Experience in one or more of the following aspects of RL: transfer learning, lifelong learning, multi-agent systems, explainable RL, multi-objective RL
- Excellent knowledge of programming in Python
- Publications in leading AI and/or communications venues
- Excellent written and oral communication skills
- The ability to work well in a group
- Strong self motivation and willing to learn attitude

Desirable Knowledge & Experience

Experience in one or more of the following applications areas, including knowledge of appropriate simulators, is considered a bonus:

- intelligent transport systems/intelligent mobility,
- IoT/sensor networks,
- AI on energy-constrained devices,
- drone communications.

Post Funding

The post is funded by Science Foundation Ireland (SFI), as part of a joint project with National Natural Science Foundation of China (NSFC), collaboration between Trinity College Dublin and Tsinghua University.

Post Location

The post will be hosted at the CONNECT (<https://connectcentre.ie/>), Ireland's largest telecommunications research centre. The Centre carries out industry-informed research focusing on wireless and optical networks of the future with a strong emphasis on the technologies that will underpin these networks. We pride ourselves in carrying out research that is of the highest quality and that has international impact. We also pride ourselves in being an inclusive, diverse, creative, and friendly place to work.

Trinity College Dublin

Founded in 1592, Trinity College Dublin is the oldest university in Ireland and one of the older universities of Western Europe. On today's campus, state-of-the-art libraries, laboratories and IT facilities, stand alongside historic buildings on a city-centre 47-acre campus.

Trinity College Dublin offers a unique educational experience across a range of disciplines in the arts, humanities, engineering, science, human, social and health sciences. As Ireland's premier university, the pursuit of excellence through research and scholarship is at the heart of a Trinity education. TCD has an outstanding record of publications in high-impact journals, and a track record in winning research funding which is among the best in the country.

TCD has developed significant strength in a broad range of research areas including the 18 broadly-based multi-disciplinary thematic research areas listed below.

Sustainable Environment	Next Generation Medical Devices	Identities in Transformation
Smart and Sustainable Cities	Creative Technologies – Digital Media, Arts and Entertainment	International Development
Cancer	Neuroscience	Immunology and Infection
Nanoscience	Telecommunications	Creative Arts Practice
Inclusive Society	Mathematics of Complexity	Intelligent Media and Human Communication
Ageing	International Integration	Digital Humanities

Its current flagship interdisciplinary research institutes are in areas such as biomedical science, arts and humanities, neuroscience, international integration studies, and nanostructures and nanodevices. The construction of Ireland's first purpose built nanoscience research institute, CRANN, was opened in January 2008, which houses 150 scientists, technicians and graduate students in specialised laboratory facilities.

The building also includes an innovative public venue, the Science Gallery. In 2011, it received the Shorty Award for Best Cultural Institution on Twitter globally and the Irish Web Award for Best Education and Third Level Website. These joined a list of awards that includes European Museum of the Year Award – Special Commendation 2010 and National IT award for best use of technology in education, 2009.

The recently opened Trinity Biomedical Sciences Institute (TBSI) is an unprecedented development for Biomedical Research in Ireland, both in terms of scale and ambition. It

provides a facility for TCD to continue its upward trajectory in both basic and translational research programmes, notably in the areas of Immunology, Cancer and Medical Devices.

The Library of Trinity College is the largest research library in Ireland and is an invaluable resource to scholars. In addition to purchases and donations accrued over four centuries, the College has had 200 years of legal deposit. By this right Trinity can claim a copy of every book published in Ireland the UK. The Library has over 4.25 million books, 22,000 printed periodical titles and access to 60,000 e-journals and 250,000 e-books. The Library's research resources also include internationally significant holdings in manuscripts (the most famous being the Book of Kells), early printed material and maps. Its collections and services support the College's research and teaching community of 15,000+ students and academic staff.

Trinity continues to attract intellectually strong students from Ireland and abroad. More than half of its incoming undergraduates have earned in excess of 500 out of a maximum 600 points in the national Leaving Certificate examination. The accessibility of a Trinity education to all students of ability is also very important. Trinity College was the first university in Ireland to reserve 15% of first year undergraduate places for students from non-traditional learning groups – students with a disability, socio-economically disadvantaged students as well as mature students. The College has met its target in this respect. There is also an exciting international mix of its student body where 16% of students are from outside Ireland and 40% of these students are from outside the European Union. TCD students also have an opportunity to study abroad in other leading European universities through Trinity's partnership agreements.

Students also benefit from a scholar teacher model where they have the opportunity of being taught by world-leading experts in their field. Interdisciplinarity forms a key element in the College strategy in increasing Trinity's international standing as a research-led university.

Many of Trinity College Dublin's alumni have helped shape the history of Ireland and Western Europe. They include author, Jonathan Swift, philosopher, George Berkeley, political philosopher, Edmund Burke, wit and dramatist, Oscar Wilde, historian, William Lecky, religious scholar, James Ussher, scientists, John Joly, George Johnstone Stoney, William Rowan Hamilton and physicians, William Stokes and Denis Burkitt.

Two of Trinity College's alumni have won Nobel prizes – Ernest Walton for Physics in 1951 and Samuel Beckett for Literature in 1968. The first President of Ireland, Douglas Hyde was a graduate as was the first female President of Ireland, Mary Robinson.

Equal Opportunities Policy

Trinity College Dublin is an equal opportunities employer and is committed to the 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.

Application Procedure

Candidates should submit a cover letter together with a full CV and contact details of 2 referees not later than end of the day on March 10th 2022 via email to: _____

Prof. Ivana Dusparic at Ivana.Dusparic@tcd.ie
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Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin



SFI Research Centre for
Future Networks

