



Post Specification

Post Title:	Post-Doctoral researcher in Natural Language Dialogue Processing
Post Status:	24 Month Fixed Term Contract, Full-Time
Research Group / Department / School:	ADAPT Centre, Centre for Digital Content Technology, Trinity College Dublin, the University of Dublin
Location:	Trinity College Dublin, the University of Dublin College Green, Dublin 2, Ireland
Reports to:	Principal Investigator: Professor Vincent Wade
Salary:	Appointment will be made on the SFI Team Member Budget ¹ from Level 2A to Level 3 scales at a point in line with Government Pay Policy. (€36,489 - €54,245 p.a.)
Hours of Work:	Hours of work for academic staff are those as prescribed under Public Service Agreements. For further information please follow the link below: http://www.tcd.ie/hr/assets/pdf/academic-hours-public-service-agreement.pdf
Closing Date:	12 Noon (Irish Standard Time), 28 th February 2018

¹ http://www.sfi.ie/resources/SFI_Grants_Team_Member_Budgeting_Scale_May_2017.pdf

Post Summary

Stochastic Natural Language Dialogue Processing

The Science Foundation Ireland ADAPT Research Centre (adaptcentre.ie), seeks to appoint a Postdoctoral Research Fellow to conduct research in the areas of stochastic/neural network natural language (spoken) dialogue processing and personalisation for human computer interaction with an emphasis on social/informal dialogue in conversational relational agents/virtual companions.

The researcher will support research in the ADAPT Research Theme “Personalising the User Experience”, working towards creating dramatic improvements in how users engage with content by enriching the user experience, while alleviating current frustrations of cognitive overload when performing diverse actions on content. The work is motivated by the volume and veracity of information that end users are tasked with trying to make sense of on a daily basis. The theme is revolutionising how users discover, share and work with multimodal content as part of the global conversation by focusing on pertinent content/actions. There is a strong connection with the theme entitled “Interacting with Global Content” which overall seeks to empower people to interact with digital content in ways that are more intuitive and that mimic the richness of human perception in all interaction. The candidate should have a mature personal research plan in a relevant area of dialogue processing that complements the overall research goal. The researcher will also be responsible for supporting research in in a number of areas including:

- interactive (dialogic) information retrieval
- user modeling

Thus, the ideal researcher will typically have specific expertise in dialogue processing, and be able to identify how they can contribute to wider research in (multimodal) dialogue systems. Reporting to a Principal Investigator, the successful candidate will work within a large group of Postdoctoral Researchers, PhD students and Software Developers.

Background on 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.

Why join ADAPT @ TCD?

- Work on hard problems in an interdisciplinary and exciting research environment. The ADAPT Centre combines the expertise of more than 150 researchers at Trinity College Dublin, Dublin City University, University College Dublin, and Dublin Institute of Technology. As well as conducting core research we have an active industry engagement programme and working on exciting and successful applied research projects with some of the world's leading brands.
- Work in a University where excellence of research is valued. Trinity is Ireland's No. 1 University and is ranked in 88th position in the top 100 world universities (QS World University Rankings 2017/18).
- Work in a centre focussed on advancing your career. Whether you want to take an academic, industrial, or entrepreneurial career path, ADAPT prides itself in the support and mentoring that enables all its postdocs to reach their full potential. This year alone ADAPT's postdoc-to-PI programme has helped three postdocs transition to be Principal Investigators on their own H2020 projects, while four other have recently won funding with ADAPT support to realise the commercialisation of their research through spin outs and licensing.

For further information, please contact Prof. Vincent Wade (vwade@scss.tcd.ie).

Standard Duties and Responsibilities of the Post

Reporting to his/her Principal Investigator the Researcher will:

- Conduct a specified programme of research under the supervision and direction of the Principal Investigator (PI).

- Support the PI and research group in the design, development and implementation of the research programme.
- Research solutions to problems in a number of areas of interest, including:
 - Dialogue policy modeling
 - Belief state tracking
 - Natural language understanding and generation
 - Semantic embedding
 - Integration of external task/activity controllers
 - Memorisation and recall
 - Ontology acquisition
 - Question answering
 - Summarisation
 - Turn taking
 - Incremental learning
- Substantially contribute to the identification of external funding sources and assist in the writing of grant proposals.
- Mentor, assist and supervise postgraduate research students as required.
- Assist the PI in the management/co-ordination of key aspects of the research programme (e.g. financial management, reporting, equipment management etc.).
- Engage in the dissemination of the results of the research in which he/she is engaged to the wider research community with the support and under the supervision of the Principal Investigator.
- Engage in appropriate training and development opportunities as required by the Principal Investigator, the School or Research Centre, or the University.
- Engage with internal and external stakeholders including academic and industry partners/collaborators as appropriate.
- Carry out administrative work associated with the programme as necessary.
- Participate in ADAPT Centre activities, such as industry showcases and annual reviews.
- Report on progress at meetings and in writing to ADAPT Centre Management.
- Produce top-quality journal and conference publications, in collaboration with the Principal Investigator (PI).

Funding Information

The position is funded through the Science Foundation Ireland (SFI) ADAPT Research Centre.

Person Specification

Qualifications

Candidates must have a PhD in Computer Science, Artificial Intelligence, Computational Linguistics or related, with a strong dialogue processing and machine learning foundation. Applicants should have a minimum of 2-3 years relevant postdoctoral research experience.

Knowledge & Experience (Essential & Desirable)

Essential

- A strong record of international peer-reviewed publication and presentation in top-tier conferences in Natural Language Dialogue Systems/Processing
- A strong record of international peer-reviewed publication in top-tier journals, commensurate with career stage
- Extensive Machine Learning and Deep Learning experience, with Reinforcement Learning a plus
- In depth understanding of Relational Agents/Virtual Companions
- Excellent programming skills in Python, C/C++
- Good command of a current deep learning framework e.g. TensorFlow, MXNet
- Participation in writing of grant applications
- Mentoring of research students
- Excellent written and oral proficiency in English
- Strong communication and interpersonal skills, both written and verbal
- Desire to learn about new products, technologies and keep abreast of new products and technical and research developments

Desirable (i.e. the following would be advantageous)

- Dialogue corpus design, collection and annotation
- Experience of high-performance computing facilities
- Exposure to commercialisation of research

Further Information for Applicants

URL Link to Area	www.tcd.ie
URL Link to Human Resources	https://www.tcd.ie/hr/

Trinity College Dublin, the University of Dublin

Trinity is Ireland's premier university, with a proud tradition of excellence stretching back to its foundation in 1592. The oldest university in Ireland, and one of the oldest in Europe, today Trinity sits at the intersection of the past and the future, and is ideally positioned as a major university in the European Union. Our 47-acre campus is located in the heart of Dublin city centre and is home to historic buildings dating from the University's establishment, as well as some of the most cutting-edge teaching and research facilities in Ireland. Students at Trinity benefit from a unique educational experience across a range of disciplines in our three faculties – Arts, Humanities, and Social Sciences; Engineering, Mathematics and Science; and Health Sciences. 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 [18 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. These internationally recognised themes include such diverse areas as Cancer, Immunology, Telecoms, Identities in Transformation, Nanoscience, Neuroscience, and Making Ireland. Researchers from across the University work together in innovative ways to develop new and exciting approaches to their research and explore the frontiers of knowledge in the 21st century. In creating these dedicated research themes, Trinity's researchers are able to become a more powerful force on the global stage, successfully competing for large-scale grants and attracting top students and faculty to the University. Trinity is home to Ireland's first purpose-built Nanoscience research institute, CRANN, which opened in January 2008. This state-of-the-art facility houses 150 scientists,

technicians, and graduate students in specialised laboratories, fostering creative innovations that have seen Trinity's researchers make significant breakthroughs.

The Trinity Long Room Hub for Arts and Humanities Research Institute is the University's flagship institute for research in the Arts and Humanities, providing a world-class environment for cross-disciplinary collaborative projects. The Long Room Hub provides a central location through which the University's internationally respected Arts and Humanities research can become more visible, demonstrating its relevance for contemporary and future societies. Researchers from across the University regularly participate in debates on topical issues facing the world today. As well as operating an International Visiting Research Fellowship programme, the Long Room Hub also hosts major EU-funded Digital Humanities projects.

One of the most instantly recognised parts of Trinity's campus is the famous Old Library, home to the historic Book of Kells as well as other internationally significant holdings in manuscripts, maps, and early printed material. Trinity's Library is the largest research library in Ireland and is an invaluable resource to Trinity's students and research community. Built up over the four centuries of the University's existence, the Library's collections have benefitted from its status as a Legal Deposit library for the past 200 years, granting Trinity the right to claim a copy of every book published in Ireland and the UK. At present, the Library's holdings span approximately 4.25 million books, 22,000 printed periodical titles, and access to 60,000 e-journals and 250,000 e-books.

Trinity attracts top students from Ireland and abroad and prides itself on the consistently high standard of student admitted to the University every year. These students are drawn to Trinity for the excellence of our research-led teaching and for the quality and prestige a degree from this University confers. Trinity has also pioneered accessibility to education in Ireland, becoming the first university in the country to reserve 15% of its undergraduate places for students from non-traditional learning groups. Trinity is the top-ranked European university for student entrepreneurship and Europe's only representative in the world's top-50 universities.

Our alumni have gone on to shape the history of Ireland and of Western Europe in a wide range of fields. These include such notable figures as Jonathan Swift, Oscar Wilde, William

Rowan Hamilton, Edmund Burke, William Stokes, Denis Burkitt, Louise Richardson, Lenny Abrahamson, and Anne Enright. Three of Trinity's graduates have been awarded Nobel prizes: Ernest Walton for Physics in 1951; Samuel Beckett for Literature in 1968; and William Campbell for Physiology / Medicine in 2015. Trinity also counts the first female President of Ireland among its alumni in Mary Robinson, as well as other notable former Presidents Douglas Hyde and Mary McAleese. At Trinity we are justifiably proud of our tradition, and we strive to uphold this excellence as we face the demands of the 21st century.

Ranking Facts

Trinity is the top ranked university in Ireland. Using the QS methodology we are ranked 88th in the world and using the Times Higher Education World University Rankings methodology we are 117th in the world.



Overall

- Trinity is Ireland's No.1 University in the QS World University Ranking, THE World University Ranking and the Academic Ranking of World Universities (Shanghai).
- Trinity is ranked 88th in the World, and 29th in Europe, in the 2017/2018 QS World University Ranking.

- Trinity is ranked in the Top 100 for Graduate Employability in the QS 2017 Rankings.
- Trinity is in the Top 50 most innovative universities in Europe according to Reuters.²
- Between 2010 and 2015, Trinity was ranked the top university in Europe for entrepreneurship according to Pitchbook's independent analysis.³

Internationalisation

- Trinity is ranked 52nd in the world in the THE World University Ranking for international outlook.

Research Performance

- Of the 981 institutions included in the THE World University Rankings for 2017, Trinity is in the top 15% internationally for research performance.
- Trinity is ranked in the top 15% internationally by QS for citations.

In the QS World University Rankings:

- Trinity featured in the world's elite (Top 200) institutions in 25 of the 28 subjects in which it was evaluated by the QS World University Rankings by Subject in 2015. Of these, Trinity ranked in the top 100 in the world in 14 subjects and in the top 50 in the world in 6 subjects: English Language and Literature; Nursing; Politics and International Studies; History; Biological Sciences; and Modern Languages.
- In three out of the last four years, Trinity has been consistently ranked in the Top 50 worldwide for the following areas: English Language and Literature; Nursing; Modern Languages; and Politics and International Studies.
- In the QS Faculty rankings, Trinity has been consistently ranked in the Top 100 globally for Arts and Humanities over the last four years.

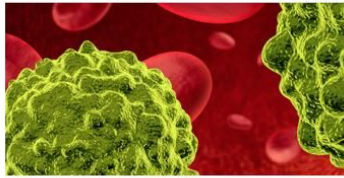
² <http://www.reuters.com/article/us-innovative-stories-europe-idUSKCN0Z00CT>

³ <http://pitchbook.com/news/reports/2015-2016-pitchbook-universities-report>

Research Themes



Ageing



Cancer



Creative Arts Practice



Creative Technologies



Digital Engagement



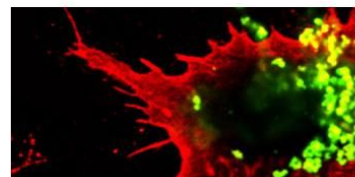
Digital Humanities



Genes & Society



Identities in Transformation



Immunology, Inflammation & Infection



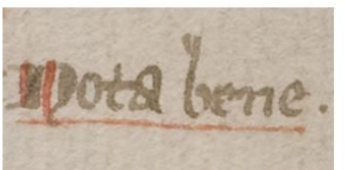
International Development



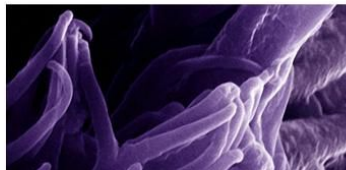
International Integration



Making Ireland



Manuscript, Book and Print Cultures



Nanoscience



Neuroscience



Telecommunications



Smart Sustainable Planet



Next Generation Medical Devices

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 Recruitment Partner on the job specification immediately and prior to the closing date/time.

Given the degree of coordination 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 Jobs, Enterprise and Innovation and further information on the Highly Skills Eligible Occupations List is set out in Schedule 3 of the Regulations <https://www.djei.ie/en/What-We-Do/Jobs-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://www.djei.ie/en/What-We-Do/Jobs-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

Candidates should submit a cover letter (1xA4 page maximum) explaining why you are suitable for the position together with a full curriculum vitae to include the names and contact details of 3 referees (email addresses required) to:

Name: Jenny Walsh

Email Address: jenny.walsh@adaptcentre.ie

Contact Telephone Number: +353 1 896 1797

Please include the job reference **AD1A-PD1** in the subject heading.



