Post Specification

<table>
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<tr>
<th>Post Title:</th>
<th>Research Assistant</th>
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<tr>
<td>Post Status:</td>
<td>Fixed Term Contract until December 2020, Full-Time</td>
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<tr>
<td>Research Group / Department / School:</td>
<td>ADAPT Centre, Centre for Digital Content Technology, Trinity College Dublin, the University of Dublin</td>
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<tr>
<td>Location:</td>
<td>Sigmedia Group, School of Electronic &amp; Electrical Engineering, Trinity College Dublin, the University of Dublin, College Green, Dublin 2, Ireland</td>
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<td>Reports to:</td>
<td>Principal Investigator: Professor Naomi Harte</td>
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<tr>
<td>Salary:</td>
<td>*€37,222 - €48,205 (*Appointment will be commensurate with qualifications and experience)</td>
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<tr>
<td>ADAPT Position Code:</td>
<td>IG_RA01</td>
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<tr>
<td>Closing Date:</td>
<td>12 Noon (Irish Standard Time), 24 August 2018</td>
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Post Summary
The ADAPT Centre, the centre for digital content technology, seeks to appoint a Research Assistant on a fixed term contract basis to facilitate the delivery of platform research focussed on multimodal aspects of human interaction. This position requires a flexible, enthusiastic individual with excellent software skills, interested in supporting and show-casing cutting edge research that incorporates elements of natural language processing, speech, image and video processing, information retrieval, and graphics and animation.

The researcher will operate across multiple research projects in the ADAPT Research Theme entitled “Interacting with Global Content”. Overall the Theme 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 Theme has projects in a variety of aspects of multimodal interaction including:

- Computer graphics and animation
- Natural Language Processing
- Audio-visual speech recognition
- Paralinguistic analysis of speech
- Image and Video Processing
- Information Retrieval

The role will involve working closely with researchers to create innovative applications to increase public accessibility/engagement and enable highly impactful research publications. Examples of this could include demo and game development. Reporting to a Principal Investigator, the successful candidate will work within a large group of Postdoctoral Researchers, PhD students and Software Developers. The role will be based in Trinity College Dublin, but may require the person to spend time based with research teams of the ADAPT Partners in DIT, UCD and DCU.

Background on ADAPT
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.

**Sigmedia**
The Sigmedia Group is based in the School of Engineering at Trinity College Dublin. The research group has a world-class reputation in digital signal processing for media applications. Major areas of expertise include human speech communication, image and video processing, post-production and restoration in digital cinema. Please visit www.sigmedia.tv for more information.

**Why join ADAPT@ TCD**
- Work on hard problems in an interdisciplinary and exciting research environment. The ADAPT Centre combines expertise of researchers at Trinity College Dublin, Dublin City University, University College Dublin, and Dublin Institute of Technology. It brings together more than 150 researchers that have collectively won more than €100M in competitive research funding and have an international track record of bridging research and innovations to more than 140 companies. With €50M in new research funding from SFI and industry, ADAPT research and technologies will help businesses in all sectors to manage, personalise and deliver digital content more effectively.
- Work in a University where excellence of research is valued. Trinity is Ireland’s premier University and is ranked in 71st position in the top 100 world universities by the QS World University Rankings 2014.
- Work in a centre focussed on advancing your career. Whether you 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 its postdoc-to-PI programme has helped three postdocs transition to be Principal
Investigators on their own H2020 projects, while four others have recently won funding with ADAPT support to realise the commercialisation of their research through spin outs and licensing.

**Standard Duties and Responsibilities of the Post**

Reporting to his/her Principal Investigator the Researcher will:

- Work closely with the PI and research group in the development and implementation of the Theme research programme.
- Specify and develop software demonstration prototypes and proof-of-concept applications based on the Theme’s research projects.
- Gain a deep understanding of multiple research projects and effectively update progress at meetings and in writing to ADAPT Centre Management.
- Engage in appropriate training and development opportunities as required by the Principal Investigator, the School, Research Centre, or the University.
- Engage with internal and external stakeholders including academic and industry partners/collaborators as appropriate.
- Participate and contribute in ADAPT Centre activities, such as industry showcases and annual reviews.

**Funding Information**

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

**Person Specification**

Applicants should have a minimum of 1-2 years relevant experience which includes one or more of Graphics, Animation, NLP, AI, Machine Learning, Deep Learning. Excellent programming skills are essential, particularly in languages such as Python, C#, or Java and in Web Application Development. Preference will be given to candidates with experience in 3D game engine technology (e.g., Unity or Unreal Engine 4). The successful candidate will be highly motivated, with strong communication skills, and the ability to work independently.
Qualifications

The successful candidate will have a primary degree in Computer Science or related discipline (essential) and a postgraduate qualification (desired). The candidate must have English language certification if English is not their first language, the requirement being: IELTS: 7.0+, TOEFL iBT: 100+, TOEFL pBT: 600+, CEF: C1+, or equivalent.

Knowledge & Experience

● Essential
  ○ Excellent programming skills in one or more of Java, C#, C++, etc.
  ○ Experience and expertise in scripting languages such as Python, JavaScript, Perl, etc.
  ○ Knowledge of web application development and security
  ○ Be proficient in the use of well-established design patterns and software engineering practices
  ○ Experience working with UNIX, Linux, VMWare, OSX and Windows operating systems
  ○ Database management skills: MySQL, MongoDB, CouchDB, Neo4j, SQL
  ○ Experience with web crawling, data wrangling, data analysis,
  ○ Strong communication and interpersonal skills, both written and verbal
  ○ Excellent written and oral proficiency in English (i.e., IELTS: 7.0+, TOEFL iBT: 100+, TOEFL pBT: 600+, CEF: C1+, or equivalent).
  ○ 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)
  ○ Experience in 3D game engine technology (e.g., Unity or Unreal Engine 4),
  ○ Knowledge of, and experience with, speech, video, NLP and Machine Learning.
  ○ Experience of front end frameworks such as Bootstrap and Angular,
  ○ Experience of high-performance computing facilities,
  ○ Exposure to commercialisation of research.
Further Information for Applicants

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<tr>
<th>URL Link to Area</th>
<th><a href="http://www.tcd.ie/Engineering/">www.tcd.ie/Engineering/</a></th>
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<td><a href="http://www.scss.tcd.ie">www.scss.tcd.ie</a></td>
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<tr>
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<td><a href="http://www.adaptcentre.ie">http://www.adaptcentre.ie</a></td>
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<td><a href="http://www.sigmedia.tv">www.sigmedia.tv</a></td>
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<tr>
<td>URL Link to Human Resources</td>
<td><a href="https://www.tcd.ie/hr/">https://www.tcd.ie/hr/</a></td>
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The School of Engineering

The School of Engineering at Trinity was founded in 1841 and is one of the oldest Engineering Schools in the world. The School consists of three Departments: Civil, Structural and Environmental Engineering; Electronic and Electrical Engineering; and Mechanical and Manufacturing Engineering. It runs accredited five-year undergraduate programmes leading to masters’ degrees in engineering, together with taught postgraduate degree and diploma courses. All the departments offer doctoral research programmes. At present, there are approximately 60 academic staff, 55 research fellows, 20 adjunct academic staff, 40 technical/support staff, 170 research students, 70 taught masters’ students, 140 diploma students and 900 undergraduates in the School spread over nine different sites on and off campus. Of a total annual School budget of around €20M, research income accounts for just over €8M. The School is the most successful Engineering School in Ireland, as recognised by its QS ranking in the world’s top 100 of Engineering and Technology Faculties.

The School of Engineering accommodates a wide range of research interests, with much of the activity spanning its three departments. The research conducted within the School is diverse and includes mathematical modelling and experimental measurement-based work. Much of the work is collaborative with other Schools in College and with national and international partners. Several research groups are recognised as international leaders in their fields; these groups are active in areas such as bioengineering; digital media; energy, transport, the environment; and telecommunications. There are currently three research centres located within the School, the Trinity Centre for BioEngineering (TCBE), the Centre for Transport Research and Innovation (TRIP) and TrinityHaus. A number of Manufacturing and Bioengineering PIs are Investigators in the SFI centre AMBER and CONNECT. External funding
for research is obtained from a wide range of sources, including the EU framework programmes, Science Foundation Ireland, HEA, Health Research Board, Enterprise Ireland, Irish Research Council and the Environmental Protection Agency. Collectively, staff have published over 1,000 academic research papers over the last five years, shared between international, peer-reviewed journals and conference proceedings. A number of academic staff act as editors or on the editorial boards of international, peer-reviewed journals and several contribute to the organisation of international conferences or to the assessment of research in other academic institutions and of research grant applications.

**School of Computer Science and Statistics**

The School of Computer Science and Statistics (SCSS) comprises the academic disciplines of Artificial Intelligence, Networks and Distributed Systems, Graphics and Vision, Software and Systems, and Statistics and Information Systems. The School was established in July 2005 from a merging of two long-established departments: Computer Science and Statistics. Synergies in areas such as digital content, telecommunications, computer vision and ubiquitous computing, combined with cutting edge statistical learning research has provided a rare environment in which today members of SCSS exploit the emergence of data and its analysis as a driver in many fields of computer science and statistics. Comprising 65 academics and over 100 research staff, the School is internationally recognised for the quality of its research and teaching and is ranked in the top 100 Computer Science Schools worldwide as well as the highest ranked in Ireland. The School hosts two Science Foundation Ireland (SFI) Research Centres: ADAPT and CONNECT, leads the ENABLE SFI research spoke on Internet of Things, and is a partner in a further two: Lero and Insight. Also, four of TCD’s multidisciplinary research themes, namely Creative Technologies, Digital Humanities, Digital Engagement, and Smart Sustainable Cities are led by members of SCSS. The School currently coordinates six European Commission projects and is partner in a further seven. The School signed research contracts in excess of €50 million over the last three years from a range of national and international agencies such as Science Foundation Ireland (SFI), Enterprise Ireland as well as the European Commission’s Seventh and Horizon 2020 Framework Programmes. The School offers a wide range of undergraduate and postgraduate degree programmes on which approximately 1200
students are registered this year. In addition, the School offers opportunities for higher
degrees by research and there are currently over 150 registered PhD students in the School.

**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, the University is ranked 104th in the world and using the Times Higher Education World University Rankings methodology Trinity is 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 104th in the World, and 36th in Europe, in the 2018/2019 QS World University Ranking.
- Trinity is ranked in the Top 120 for Graduate Employability in the QS 2018 Rankings.
Trinity is in the Top 50 most innovative universities in Europe according to Reuters.\footnote{http://www.reuters.com/article/us-innovative-stories-europe-idUSKCN0Z00CT}

Between 2010 and 2015, Trinity was ranked the top university in Europe for entrepreneurship according to Pitchbook’s independent analysis.\footnote{http://pitchbook.com/news/reports/2015-2016-pitchbook-universities-report}

**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 Subject Rankings:**

- Trinity is ranked in the top 50 worldwide in four subject areas according to the QS World University Subject Rankings 2018. The University is ranked in the top 100 globally for 20 subjects overall.
- Trinity’s Top 50 subjects include Nursing (25\textsuperscript{th}), Classics (28\textsuperscript{th}), English (28\textsuperscript{th}) and Politics (43\textsuperscript{rd}).
- Trinity is ranked in the top 100 for each of the following 16 subjects: History, Languages, Philosophy, Theology, Computer Science, Biology, Medicine, Pharmacy, Chemistry, Geography, Materials Science, Education, Law, Social Policy, Sociology and Sport.
- The University is ranked in the top 100 for three broad subject areas: Arts & Humanities (57\textsuperscript{th}), Life Sciences & Medicine (87\textsuperscript{th}), and Engineering & Technology (89\textsuperscript{th}).
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 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 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](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 (1x A4 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, Senior Executive Officer
Email: jenny.walsh@adaptcentre.ie

Please include the job reference IG_RA01 in the subject heading.