Post Specification (Comp: 034071)

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<tr>
<th>Post Title:</th>
<th>Machine-Learning / Software Engineer/Architect for a Recommender-System Spin-Out Company</th>
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<tr>
<td>Post Status:</td>
<td>Specific Purpose (approx. 1 year)</td>
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<tr>
<td>Department/Faculty:</td>
<td>Department of Computer Science, ADAPT Centre, School of Computer Science and Statistics, Faculty of Engineering, Mathematics and Science, Trinity College Dublin, the University of Dublin</td>
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| Location: | Trinity College Dublin, the University of Dublin  
College Green, Dublin 2, Ireland |
| Reports to: | Professor Dr Joeran Beel                                                                  |
| Salary: | Appointment will be made on the Administrative Officer 2 Salary Scale (€48, 996 to € 57, 571 per annum) at a point in line with Government Pay Policy |
| Hours of Work: | 37 Hours per week                                                                        |
| Closing Date: | 12 Noon (Irish Standard Mean Time), 25th January 2020                                     |

The successful candidate will be expected to take up post on as soon as possible.
The ADAPT Centre at Trinity College Dublin has received funding to hire a start-up founder to spin-out the business start-up Darwin & Goliath [http://darwingoliath.com](http://darwingoliath.com) in the field of recommendations-as-a-service.

The position is to be filled with a product manager, business developer, machine-learning engineer, software engineer, or software architect. The person is expected to work together very closely with the current co-founder (a software engineer). Both, the new hire, and the existing engineer will be responsible for developing a recommender-system as-a-service that uses unique machine-learning technology, which is based on the research of Professor Joeran Beel who is the project lead. This position is flexible in the responsibilities and open to focus more on either software engineering / machine-learning or on the architectural and product management part.

There is currently a prototype of the system [http://darwingoliath.com](http://darwingoliath.com), which delivers around 1 million recommendations per month to several pilot partners. The goal of the project is to develop a market-ready prototype of the recommender-system as-a-service, acquire around 10 more pilot partners, and spin-out a start-up company. The two employees are expected to be the founders of the start-up company, together with Professor Beel. The expected long-term roles of the two employees / founders are CEO, CTO, CPO, CPIO, COO or comparable.

The primary task will be to design, develop and maintain the recommender system. This includes identifying suitable machine-learning and recommendation frameworks; researching, designing and implementing a novel meta-learning recommendation approach; designing database schema; writing code and administering (cloud) servers. However, additional tasks such as intern supervision, writing a business plan and acquiring pilot partners may be conducted, too. In general, as the project progresses, the tasks and responsibilities listed may be expanded and shared between the two employees. Both employees will be expected to work as a team and both are responsible for the project success.

**Informal enquiries about this post should be made to**

Professor Dr Joeran Beel [beelj@tcd.ie](mailto:beelj@tcd.ie)
Standard Duties and Responsibilities of the Post

- Applying various machine-learning and recommendation frameworks
- Designing and implementing a novel meta-learning recommender-system approach
- Designing and implementing the recommendation API (REST Web Service)
- Ensuring high code quality
- Developing and maintaining a production system that delivers millions of recommendations to around a dozen of partners, which each may have millions of users.
- Supervision of software engineers, and student interns/volunteers
- Supporting the research team of Prof Beel
- Perform other duties which will arise from time to time and as directed by the head of the Project.

Person Specification

Qualifications

- Bachelor or Master in Computer Science, or a similar field, a minimum of three years of work experience.

Knowledge & Experience (Essential & Desirable)

Essential

- Experience in designing and building large-scale (cloud) applications that deal with dozens of millions of requests per months and store and process Terra Bytes of data.
- Experience in software development processes and tools including build systems such as Gradle, continuous integration tools such as Jenkins, versioning systems such as Git, and ticket management systems such as JIRA
- Good knowledge in data formats (in particular XML and JSON), Web Services (REST) and Web standards (HTTP/HTTPS).
- Excellent knowledge in Python, MySQL, and Linux
- Very high self-motivation and hands-on experience
• Extremely high attention to detail and accuracy
• Love for high code quality

Desirable
• Good Knowledge in Recommender Systems and Machine Learning
• Experience with agile project management methods (Scrum or Kanban)
• Start-up experience
• Experience in A/B Testing
• Ability to work on own initiative but also to work as an active and efficient team member when required.
• Other related experience and skills which the candidate may have to offer will be taken into consideration.

Skills & Competencies
• Organisational Ability; Excellent organisational and task management skills together with the ability to work on a number of tasks simultaneously. Have the ability to prioritize tasks and meet deadlines; be capable of working on own initiative and work under time constraints; Be enthusiastic, flexible and willing to work outside usual office hours when required; Ability to develop creative solutions to multi-faceted problems
• Conscientious; Have a pro-active approach to work, anticipating and resolving problems in advance; Attention to detail, from anticipating and addressing issues in advance to understanding requests and delivering quality work with minimal errors
• Customer Focus: customer service skills are essential. Demonstrate emotional intelligence and communicate with a high level of initiative, tact, diplomacy and confidentiality
• Flexibility: Can operate flexibly within a busy work environment; can shift focus when required; assist beyond normal work hours when a need arises; be able to undertake other duties as necessary
• Team Worker: Ability to operate effectively as part of a team – tolerant, cordial and willing to help others, shares work and information; establishes rapport with others can influence and develop effective networks;
• Motivated: Displays a ‘can-do’ attitude, is committed to the Centre and wishes to contribute to its development; a clear demonstration of enthusiasm and passion for the role. An ability to motivate others in terms of making applications to funders

Application Information

In order to assist the selection process, applicants should submit a Curriculum Vitae and a Cover Letter (1x A4 page) that specifically address the following points in their application.

Application Information

▪ Applicants must have relevant industry experience. Applicants should clearly address this experience and how they obtained their knowledge in their application.

▪ Illustrate, through past example, their ability to work on their own initiative and resolve problems.

Please Note:

▪ Applicants who do not address the application requirements above in their cover letter will not be considered at the short list stage.

▪ Applicants should note that the interview process for this appointment may include the delivery of a presentation and may include a test of practical skills.

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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.¹
- Between 2010 and 2015, Trinity was ranked the top university in Europe for entrepreneurship according to Pitchbook’s independent analysis.²

¹ [http://www.reuters.com/article/us-innovative-stories-europe-idUSKCN0Z00CT](http://www.reuters.com/article/us-innovative-stories-europe-idUSKCN0Z00CT)
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.
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.

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

Applicants should submit a full Curriculum Vitae to include the names and contact details of 3 referees (including email addresses), together with a cover letter (1x A4 page) that specifically addresses the application procedure set out above.

APPLICATIONS WILL ONLY BE ACCEPTED BY E-RECRUITMENT:

http://jobs.tcd.ie

If you have any application queries, please contact:

Yasmin Madigan
Human Resources, House No. 4,
Trinity College Dublin, the University of Dublin
Tel: +353 1 896 3333
Email: madigany@tcd.ie