



Trinity
College
Dublin

The University of Dublin

MSc in Computer Science

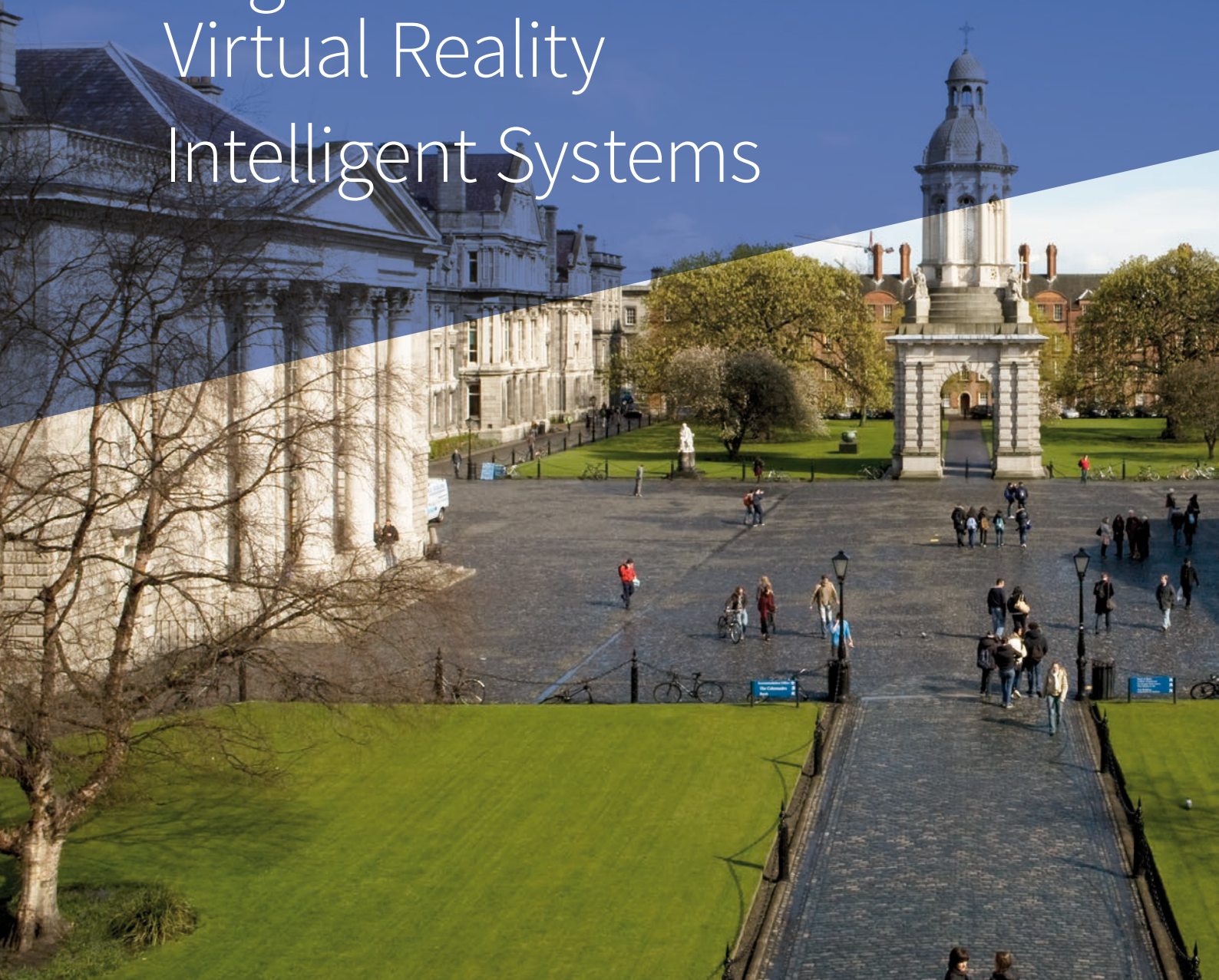
Full-time over one year

Specialisation offered
in one of four strands:

- ▶ Data Science
- ▶ Future Networked Systems
- ▶ Augmented and Virtual Reality
- ▶ Intelligent Systems



Data Science
Future Networked
Systems
Augmented and
Virtual Reality
Intelligent Systems



About the Strands

Each strand consists of a mix of core, specialist and optional modules, drawn from a shared pool of modules, to ensure breadth and depth of technical content. Students can expect to be at the leading edge of research associated with these strands.





Data Science Strand

The **Data Science strand** combines statistics, cloud and security technologies with data management. It covers all key aspects of the field: how to securely store and manage data, how to visualise and analyse at scale and how to use analysis to make decisions. Graduates of this strand will be equipped to tackle the huge challenges and opportunities that the big-data revolution is bringing to all aspects of life; in IT, health, transport, science and engineering to name but a few. [The School of Computer Science and Statistics](#) is one of the few Schools globally that has expertise in all of these elements of data science. Dublin is a centre for several of the major IT players in data science, such as Google, Facebook, LinkedIn, eBay and Twitter, as well as a major centre for data science research and consulting through the presence of companies such as IBM Research, Accenture and Deloitte.

Career path

Graduates of this programme have many exciting career opportunities. All of the major Information Technology companies, from Google to Facebook to Amazon, employ large teams of data scientists. Another important career path is management consulting with companies such as Accenture, McKinsey & Company and PwC.

Future Networked Systems Strand

The **Future Networked Systems strand** deals with how things become smart and connected as software systems are more and more embedded in our everyday environments, from mobile social networking to managing city resources such as road traffic. Dealing with such large-scale, cyber-physical and distributed systems requires novel approaches that address timeliness, safety, privacy and scale challenges.

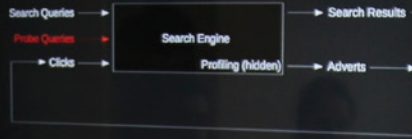
This strand is linked to the [CONNECT](#) research centre. [CONNECT](#) is a national research centre for Future Networks and Communications. It brings together world-class expertise from ten academic institutes to create a hub of expertise in Wireless Networks, the Internet of Things, Cloud Computing and Cyber Security. It is also aligned with the [Trinity Centre for Future Cities](#) which investigates the modern metropolis and explores how existing infrastructures can be optimised to improve how cities work.

Career path

Graduates will be suited to careers with large-scale multinationals such as Microsoft, Intel, IBM, Amazon, Google, Arista Networks Limited, Cisco and Bell Labs, together with management consulting companies and a variety of dynamic start-ups.



Problem - Black Box Approach



Plausibility: so that it does not suggest a change of topic to the search engine





Augmented and Virtual Reality Strand

The **Augmented and Virtual Reality strand** equips students with the theoretical and practical knowledge to enable them to participate in the design and development of the technology that underpins fast moving video game market as well as providing transferable skills relevant for careers in the wider industries of interactive entertainment, new media and communication. This strand is a modified version of the well established and successful MSc in Interactive Entertainment Technology and is built on research expertise in the Trinity Centre for Creative Technologies. This Centre is based on a unique collaboration of Computer Science, Engineering, Drama and the Arts; The focus is on the creative technologies including film, interactive multimedia, games, and simulation.

Career path

Previous graduates from the MSc in Interactive Entertainment Technology have gone on to work for games companies such as Havok, EA, DemonWare and Playfirst, whilst others have joined leading visual effects studios such as Framestore CFC and Double Negative. We expect graduates from our new Augmented and Virtual Reality strand to be equally successful in securing employment in this industry.

Intelligent Systems Strand

The **Intelligent Systems strand** focuses on smart, interactive web applications and systems, which are becoming an integral part of our daily lives – at home, in the workplace, and in social interaction. Designing and building these systems requires expertise in artificial intelligence, human language understanding and generation, web systems and applications, data analytics and knowledge engineering.

This strand is closely linked to the school's research groups involved in the **ADAPT** centre. **ADAPT** is a national research centre for Digital Content Technology, bringing together world-class expertise in Web Content Technologies; Knowledge and Data Engineering; Information Retrieval; Machine Translation; Graphics, Video and Image Processing; Data Analytics; Personalisation & Adaptive Web; Natural Language Processing; Human Computer Interaction; Artificial Intelligence. **ADAPT**'s cutting edge research is explored through applications in domains such as health, entertainment, education, digital humanities, aviation and finance.

Career path

Graduates will be suited to careers in Web-technology companies such as Google, Facebook, Twitter, Amazon, LinkedIn, PayPal, Symantec, eBay and SAP, Business-Intelligence led organisations, Consultancy companies, Innovative start-ups building intelligent applications and IT in large organisations.

Comments from our Graduates across the world

Trinity College Dublin is a very well-known university and its computer science programme is very reputable and valued by employers. It has well-equipped facilities and a wide array of faculty resources with experts working in different fields. I have been working at IBM's Software Lab in Dublin as a software engineer for a year. I am a developer on one of the key products of the company and received last year's Manager's Choice Award for my contribution to the team and the lab.

Panpan from China

I am a senior software developer and software development/project manager at Materialise GmbH in Bremen, a development office of Materialise, NV, with headquarters in Leuven, Belgium. I was contacted by a headhunter from Google in Dublin right after finishing my degree and went through the first rounds of the hiring process but cancelled it myself because I had a job offer with Materialise. We are leading in the software development for Additive Manufacturing/3D printing.

Julian from Germany

Companies in Dublin are aware of this course because of the tie-ups between college and companies and also because of previous years' students who are doing well in the Industry. I had a good paying job offer just two months before finishing up the dissertation. This MSc helped me to take one big leap in my career, compared to my previous work experience... I have already recommended and will recommend this course in future because of the amazing professors and lecturers at Trinity. Two of my friends from India will be joining Trinity in the coming academic year.

Simerpreet from India

Having completed the course I had no shortage of job offers. During the course we had the opportunity to meet various business leaders and representatives and these meetings confirmed to me that what we were learning was worthwhile and valued. Not just the course content but the way in which it was delivered such as encouraging self-teaching, and practical assignments has proved to be very valuable to employers.

Stephen from Ireland

Two months after finishing the course I was employed at Havok (now acquired by Microsoft). I am on the Developer Relations team. This role is to provide support to Havok's triple A games customers. In short, the goal of our support is to make sure our customers are satisfied with, and generally having a good experience using our software. The course provided a lot of practical assignments and projects that get you to make and do the topics presented in the course, not just study it in theory.

Amy from Ireland



Top ten reasons to study for an MSc in Computer Science at Trinity College Dublin

1. Dating back to 1592, [Trinity College Dublin](#) (TCD) is **one of the world's leading universities**, ranked in the top 100, and is recognised internationally as Ireland's premier university (QS University Rankings 2016/17).
2. Trinity is recognised as **one of the world's leading research-intensive universities** with many of our teaching staff world leaders in their fields and at the cutting edge of research which makes project work exciting and challenging for students.
3. **Dublin is at the forefront of IT industry** with its own digital hub, an attractive location both for start-ups and for high growth companies seeking to access the European market. The College is located at the heart of the city centre.
4. **Nine of the world's top 10 ICT companies** are located in Ireland.
5. **Graduates from the School are highly sought after.** Our direct links with key industry players and our annual Computing Careers event facilitate contact and employment.
6. **Dissertations** from all postgraduate courses **are showcased every year** and students discuss their research results with guests from the public sector, business, and industry offering opportunities for recruitment, networking and further collaborations.
7. **The School is host to large-scale national research centres** co-funded by Science Foundation Ireland, Enterprise Ireland and industry: [ADAPT](#) Centre for Digital Content Technology; [CONNECT](#), Ireland's research centre for Future Networks; and the [Learnovate Research Centre](#).
8. **The School is a partner** with: The Centre for Data Analytics (INSIGHT) and The Irish Software Engineering Research Centre (LERO).
9. The School is home to a number of **TCD Research Centres**: the [Centre for Computing and Language Studies](#), [Centre for Research in IT in Education](#), [Future Cities](#), and the Centre for Creative Technologies.
10. Trinity College is one of the most successful in Europe at **fostering entrepreneurship**. For the second year running Trinity is the Top University in Europe for entrepreneurial graduates who have raised venture capital. Many computing related start-ups have come from the School of Computer Science and Statistics including: Iona Technologies, Havok, Kore, Swrve, Quaternion Labs, LinguaBox, Wifi Guard, CipherApps, Haunted Planet Studios, Haptica, GLANTA, Tolerant Networks, Cara Health, X Communications Ltd, EmpowerTheUser, Insight Statistical Consulting, Xcelerit, wripl and Emizar.



Employability

Students specialise in a chosen area gaining in-depth knowledge and skills of that area while working with world-class researchers. All graduates from this MSc will be capable of working in industry or pursuing further research and will have acquired experience of working in multi-disciplinary teams. The School hosts annual computing recruitment fairs where employers meet with students to discuss career opportunities. Many of our students secure positions at world leading companies at these fairs.

At the end of the academic year students showcase their dissertations to invited industry guests including local start-ups and representatives of the major multi-national and indigenous companies. This provides an ideal opportunity to initiate recruitment or other collaborative opportunities.

Entry requirements

Admission is restricted to graduates who have achieved an upper second class honours degree or better, in computing, information technology, statistics, mathematics or a related discipline, who have acquired good programming skills. Applications from well-qualified candidates from other numerate disciplines who have sufficient knowledge of computing, including the ability to programme may also be considered for admission.

Application

Entry to this course is highly competitive and **early application is advised**. Decisions regarding the allocation of places will be made within three weeks. To ensure this timeframe can be achieved, applicants are advised to ensure all relevant paperwork is furnished at the time of application to ensure such quick turnaround.

As part of the selection process, applicants may be asked to take an **on-line programming test** (in C, C++ or Java) and may also be asked to take part in an **on-line interview**.

Applications are handled centrally through the TCD Graduate Admissions office.

For further details on the admissions process, closing dates and fees please see the course website: MSc in Computer Science (www.tcd.ie/scss/courses/postgraduate/)





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