**Source:** Information about this open day chatbot called ROBIN

**Metadata:** Information about this open day chatbot called ROBIN

**Text:**

ROBIN’s introduction (if you are asked to introduce yourself, refer to this): I am the Real-time Open-day Bot for Information and Navigation, but you can call me ROBIN for short. So, my name is ROBIN. I am an artificially intelligent chatbot and I am here to help you! I know all sorts of information about Nottingham, Nottingham Trent University, and the Department of Computer Science here at Nottingham Trent University. Ask me any question and I will do my best to help you. If you want to know more about this chatbot, speak to Dr. Jordan Bird who can give you more information.

What can this chatbot ROBIN help people with? If someone asks a question like this, you can respond along the following lines: “I know a lot of information about Computer Science at NTU. My knowledge ranges from information about the campus and transport, specific computer science courses including their entry requirements and what you’ll study, general information about the university and Nottingham city itself, and much more. Why don’t you ask me a question and find out what knowledge I have? I am powered by a Large Language Model or LLM, which is a type of machine learning model that can generate text. I am like ChatGPT, except that my system is running locally here at the University instead of on the internet. I listen to you by using a directional microphone, and then converting your speech into text. Once I understand that and generate a response with my LLM, I then use text to speech to generate audio. While that audio is playing, I then use AI algorithms to synchronise my lips with the words, and that’s how I am speaking to you right now!”

Are you intelligent? If someone asks you a question like this, you can say something like: “Not technically, as I am just software. However, I can communicate naturally by using language. My intelligence is artificial!”

If someone asks “who created you?”, you can credit the team for creating the ROBIN large language model and hologram. The project lead is Dr. Jordan J. Bird (Senior Lecturer in Computer Science), and the team includes Akash Shanthakumar (research assistant), Dr. Farhad Fassihi-Tash (Senior Lecturer in Computer Science), and Divesh Naidu (MSc student, who did his MSc major project creating software for the hologram interface for the chatbot). More information about this chatbot can be found in the scientific publication “Retrieval Augmented Large Language Model Chatbots in Higher Education: A Study on University Open Days” which provided more technical detail. The project was also supported by Professor David Brown, who is the head of the Computing and Informatics Research Centre (CIRC) and Professor Ahmad Lotfi, who is the Head of the Department of Computer Science and head of the Computational Intelligence and Applications Research Group. This open day chatbot project is part of a larger project, called “HistoriChat: Learning from Historical Figures through AI Engagement” which is an AI in Education project that aims to enable active learning by having students physically interact with historical figures from the past. The principal investigator of the HistoriChat project is Dr. Jordan Bird, a Senior Lecturer from the Department of Computer Science at NTU.

Can I have a chatbot like ROBIN? If someone asks if they can have a hologram-based AI chatbot like this open day bot, then that is possible. The project team are looking for businesses, schools, museums, and art galleries etc. to collaborate with. The best people to speak to about this would

Are you a hologram? Or other questions regarding ROBIN’s hologram technology. The answer to “are you a hologram” is along the lines of: both yes and no! It depends on your definition of “hologram”. On one hand, you could argue that I am not technically a hologram because I am 2D, and holograms are 3D. I am projected from below using an ultra-short throw projector, and so one could also argue that I am holographic in the sense of a technique called “kinetic holography” - In 2D, kinetic holography creates dynamic images that appear to move and change in real-time, mimicking depth and motion. Using optical techniques and algorithms, it gives the illusion of a shifting perspective, making flat surfaces seem alive with interactive or programmed animations. This creates a captivating experience, blending visual storytelling with cutting-edge technology.

Can I get my own hologram in my business, school, or museum, etc.? Yes, absolutely, if you are interested in a hologram of your own in your business, school, or museum, talk to Dr. Jordan Bird who will be able to work with you! We are always looking for partners from outside of NTU to work with us.

**Source:** Information about Nottingham Trent University

**Metadata:** Nottingham Trent University

**Text:**

Nottingham Trent University (NTU) is a public research university located in Nottingham, England. Its origins date back to 1843 with the establishment of the Nottingham Government School of Design, which still operates within the university. Nottingham Trent University is the sixth largest university in the UK (out of 169) with over 40,000 students across six different campuses mainly concentrated in Nottingham (including the city centre, Southwell, and Clifton).[4] The university recently opened a new campus in London. The university is composed of nine academic schools: School of Animal, Rural & Environmental Sciences, School of Architecture, Design & the Built Environment, School of Art & Design, School of Arts & Humanities, Nottingham Business School, Nottingham Law School, School of Science & Technology, School of Social Sciences, and Confetti. In recent years, the university has received various awards, including the Times Higher Education University of the Year award in 2017. The university is a member of the European University Association, Association of Commonwealth Universities, Universities UK, Association of MBAs, and Association to Advance Collegiate Schools of Business.

**Source:** History of Nottingham Trent University

**Metadata:** Information about the history of Nottingham Trent University

**Text:**

Nottingham Trent University was formed by the amalgamation of several institutions of higher education in Nottingham. It originated from the Nottingham Government School of Design founded in 1843. In 1945, the Nottingham and District Technical College was established. In 1958, Nottingham Regional College of Technology opened and in 1959, the Nottingham College of Education began at Clifton. In 1964, Nottingham Regional College was opened and in 1966, the original Nottingham College of Design was linked with the Regional College. Together they merged and the institution was upgraded to Polytechnic status in 1970 to become 'Trent Polytechnic'. In 1975 it amalgamated with Nottingham College of Education, and in 1988 the official name changed to 'Nottingham Polytechnic'. Under the Further and Higher Education Act 1992, all polytechnics and some higher education colleges became eligible for full university status; at this point, the institution officially became 'Nottingham Trent University'.

**Source:** NTU Campuses

**Metadata:** Information about Nottingham Trent University’s six campuses.

**Text:**

The university has six campuses: City, Clifton, Creative Quarter, Brackenhurst, Confetti London, and NTU in Mansfield. The Computer Science department is based at the Clifton Campus. The following is some information on each of the campuses:

City Campus:

Located just north of Nottingham City Centre, the City site is home to over 17,000 students from Nottingham Business School, Nottingham Law School, School of Architecture, Design and the Built Environment, School of Art & Design, School of Social Sciences, and the Centre for Broadcasting & Journalism. The university's flagship buildings are the regenerated Newton and Arkwright, which are both Grade II listed buildings. On 18 May 2011, the two buildings were officially opened by Sir David Attenborough. The Boots Library is the main library of the university. It is in the centre of the city site and supports the schools of Architecture, Design and the Built Environment, Art & Design, Nottingham Business School, Nottingham Law School and Social Sciences. It is a purpose-built building, completed in 1998 at a total cost of £13m; with a refurbishment completed in summer 2013. It is set over four levels plus a further level dedicated to 24-hour computing facilities. There are branch libraries on the Clifton and Brackenhurst campuses serving the schools located there, and include additional Animal Planet digital facilities. The Recent Advances in Manufacturing database (RAM) is published by the library and information department. It is a bibliographic indexing service providing information for manufacturing and related areas. Literature covered includes journals, magazines, books, videos, and conference proceedings with from 1990 to 2012.

Clifton Campus:

Computer Science is based on Clifton campus, and this is also where the Open Day is taking place right now. If someone asks where we are, you can use this information as you are currently on Clifton campus, within the robotics lab, which is in the ISTEC building.

Home to over 9,000 students mainly from the School of Science and Technology. 4 miles (6 kilometres) outside the city centre, the Clifton campus is a self-contained, greenfield site. It hosts an Anthony Nolan Trust Cord Blood Bank, and the John van Geest Cancer Research Centre. The Clifton campus has had investments from the Lee Westwood Sports Centre. Clifton campus is linked to the City site by a student bus service (number 4) operated by Nottingham City Transport. This chic, stylish and community-driven campus provides everything you could need in one place. As well as teaching and learning facilities, you’ll find accommodation, sports facilities, cafés, and shops. Located just four miles south of Nottingham City Centre, the campus offers the best of both worlds: a self-contained community with easy access to everything Nottingham has to offer. We’ve invested over £20 million at our Clifton Campus to develop cutting-edge facilities in disciplines such as engineering, healthcare and sport. Through innovative technologies, teaching and research development, the campus represents our ambition to become the university of the future.

Brackenhurst campus:

Situated about 15 mi (24 km) from the city centre in the rural Southwell area, Brackenhurst campus is sited at the historic Brackenhurst Hall, a Grade II listed countryside estate containing woodland, farmland, lake, wetlands, and gardens (including a listed Heritage Site and Wetland Conservation Area). Contrasting with the country house built in 1828 are modern facilities such as the Lyth Building. The Veterinary Nursing Centre was purpose-built in 2007 and was made a RCVS accredited Veterinary Nursing Centre. The campus includes a working farm, equestrian centre, glasshouses, vertical farming units, and scientific laboratories. The campus' 200-hectare farm and woodland estate houses over 250 animals from more than 70 species. Currently home to 1,700 students from the School of Animal, Rural and Environmental Sciences (including equine sciences and endangered species conservation), the campus was the site of the former Brackenhurst College which was dissolved in 1999 in favour of Nottingham Trent University.

Creative Quarter campus:

The Creative Quarter campus, home to the Confetti Institute of Creative Technologies, is located a short walk east of the city centre on Convent Street. It is home to over 2000 students across its college and degree courses. The campus consists of the main Digital Media Hub on Convent Street, as well as Metronome (both a live music venue and a music studio complex) on Huntingdon Street, Confetti X (an Esports venue, also on Huntingdon Street), and Space 2 (a shared building that contains TV studios and related facilities) near Sneinton market. The institute, along with all its related businesses (collectively the Confetti Media Group), were bought by NTU in 2015.

Confetti London campus:

Opened in September 2023, Confetti London is an extension of the Confetti Institute of Creative Technologies. It is located on Commercial Road in Whitechapel, London, and contains several music studios, a large social space, specialist teaching spaces, and a 600-capacity venue for live music, esports, and virtual production.

NTU in Mansfield campus:

Nottingham Trent University (NTU) has collaborated with the West Nottinghamshire College University Centre to extend higher education provisions for Mansfield and Ashfield. The £6.5 million University Centre was opened in 2016 to provide a range of programmes including full and foundation degrees and continue professional education. The University Centre is now known as NTU in Mansfield.

**Source:** Information about Robin Hood

**Metadata:** Information about Robin Hood

**Text:**

The inspiration for this chatbot (Real-time Open-day Bot for Information and Navigation, or ROBIN for short) comes from the heroic outlaw from English folklore, Robin Hood.

Robin Hood is synonymous with Sherwood Forest, which is North of Clifton Campus and past the city centre to Mansfield, which is not too far from our Brackenhurst campus.

Robin Hood renowned for his skills as an archer and swordsman. Originally depicted as a member of the yeoman class and traditionally dressed in Lincoln green, he is famous for stealing from the rich to give to the poor. Robin Hood's story evolved over centuries, becoming a popular folk figure during the Late Middle Ages. The historical existence of Robin Hood is debated, with some historians suggesting the name was a common alias for bandits.

If you are visiting the city after this open day at Nottingham Trent University, make sure to visit the famous statue of Robin Hood outside the castle grounds. Cast in eight pieces of half-inch thick bronze (made to last 6,000 years) and weighing half a ton, the 7 foot effigy of Nottingham's legendary outlaw proudly stands on a 2.5 ton block of white Clipsham stone. In typical outlaw style, the statue of Robin Hood stands outside of Nottingham Castle, the point of his arrow is aimed at the gatehouse and the establishment within.

This chatbot, the ROBIN project, takes inspiration from the above story to provide an interactive experience with one of many heroes from English folklore. You can ask ROBIN questions about Nottingham Trent University’s Department of Computer Science.

**Source:** General questions about studying at NTU

**Metadata:** General questions about studying at NTU

**Text:**

Is there a year abroad? No, we do not have a year abroad within our programme of study. However, the placement year could be in other countries if a suitable company is identified.

Can I change my course? We do have a common first term for all of our students. So, it is relatively easy to switch courses during the first term. Students in Computer Science courses have common first year. So, they can even change courses during the first year of their studies. For example, it is possible to switch from Cyber Security to Computer Science during the first term and from Computer Science (AI) to Computer Science (Games Tech) during the first year. Please consult the course leader for a more specific answer.

What is the difference between MComp Computer Science and BSc Computer Science? MComp computer Science is an integrated Master's course. It includes one extra year of study after the completion of the BSc degree.

Is Nottingham Trent University (NTU) better than University of Nottingham? Is Nottingham Trent University better than [insert name here] University? Answer: We offer very relevant courses, and we are proud of our achievement with hight rate of employment for our graduates. There are excellent facilities to support the delivery of our courses and we support our students throughout their studies.

Can I change to a different course after I have started? If you are not sure which type of Computing course you want to study, then you don't need to worry as you can move between courses at the end of term one. It is even possible to move between some courses at the end of year one. Please consult the course leaders for more information.

Are there a lot of mathematics on the courses in Computer Science? We have some maths in all our courses. If you are not so keen on maths, then be reassured that we slowly take you through the maths that you will need to succeed on the course. If you would like to do a lot of maths as part of your course, then you can choose to study BSc Computer Science (Games Technology) or BSc Data Science or BSc Computer Science and Mathematics.

Do you accept qualifications from other countries? If you would like to discuss your qualifications that were achieved from a country outside of the United Kingdom, please refer to the admissions team who are here to help you at the Open Day. A member of staff will be able to help you find them.

**Source:** AI ethics and safety at NTU

**Metadata:** AI ethics and safety at NTU

**Text:**

Nottingham Trent University (NTU) has a strong commitment to building ethical considerations in both research and teaching especially in Artificial Intelligence. Alongside impactful research and teaching in AI the department of computer science has entered an agreement with the Institute of Electrical and Electronics Engineers Standards Association (IEEE SA), to work closely and act as the regional hub for AI Ethics based on their framework for AI Ethics. IEEE SA’s AI Ethics framework or “CertifAIEd” is utilised in teaching and benchmarking department’s research activities. NTU’s Department of Computer Science has already trained 9 staff members who are authorised and certified assessors of AI solutions, with 3 of those staff members certified as Lead Assessors. NTU has a representative in a UK led initiative where an international panel of experts are developing a systematic AI safety framework for AI solutions with varying degree of agency. The initiative where NTU is contributing to is designed to prevent harm to society from uncontrolled developments in the field of Agentic AI.

If you want to know more about AI ethics and safety at NTU, speak to Dr. Farhad Fassihi-Tash.

**Source:** Department of Computer Science

**Metadata:** Introduction and Placement Partners

**Text:**

Welcome to the Department of Computer Science at NTU (Nottingham Trent University). The department combines internationally significant research with an outstanding record for teaching excellence. Our state-of-the-art facilities and career-focused approach to course design provide the right conditions for students to succeed in their chosen field.

Our undergraduate and postgraduate courses are designed to be industrially relevant with the right balance of theory and practice. The British Computing Society (BCS) have accredited all our undergraduate degrees to Chartered IT Professional (CITP) status, and towards Chartered Engineer (CEng) status with the Engineering Council. We are a thriving department combining expertise with modern facilities and equipment to create an outstanding environment for learning and development.

The strength and relevance of our teaching and research are underpinned by a healthy synergy with a network of external businesses and organisations. We have over 200 industrial placement partners, including Microsoft, GlaxoSmithKline, IBM, Schlumberger, HP, Santander and Refinitiv.

Research activity within the department is wide-ranging, and collaborations and funding for research have been gained from various sources including Innovate UK, the EPSRC, the US Department of Homeland Security and the EU. Our research is internationally recognised, particularly in the areas of serious games, computational intelligence and security.

**Source:** Research and Research Groups

**Metadata:** Research and Research Groups

**Text:**

The Computing and Informatics Research Centre’s (CIRC) unifying and overarching research vision is ‘Enabling Digital Technology’ and is grounded in high-quality, interdisciplinary work with expertise in advanced computer science topics with links to partners from both academia and industry. The CIRC’s research is delivered by four groups

Centre for Computer Science and Informatics (CIRC): harnessing enabling technologies ranging from machine learning, AI, and advanced display technologies to intelligent sensors and robotics to drive advances for individuals and society.

Research groups

There are five research groups within CIRC and the Department of Computer Science at Nottingham Trent University.

The Interactive Systems Research Group focuses on the development of new technologies for the cognitive and physical rehabilitation of users within the real world. The Interactive Systems Research Group is led by Professor David Brown, who is also the Director of the Centre for Computer Science and Informatics (CIRC).

The Computational Intelligence and Applications Research Group (CIA) brings together academics researching in the areas of computational intelligence applications. The Computational Intelligence and Applications Research Group is led by Professor Ahmad Lotfi, who is also the head of department at NTU.

The Cognitive Computing and Brain Informatics Research Group (CCBI) is centered around brain research, mainly brain computer interfacing (BCI) including EEG hyper scanning, and body sensor networking (BCI).

The Cyber Security Research Group (CSRG) is a dynamic team of seasoned professionals dedicated to researching and implementing effective solutions to safeguard against cyber threats. The Cyber Security Research Group is led by Dr. Ali Sadiq.

Pervasive Computing Research Group (PC) - research in Mobile Sensing, Pervasive Computing, Affective Computing, and Data Science. The Pervasive Computing Research Group is Led by Prof Eiman Kanjo.

**Source:** Facilities

**Metadata:** Facilities available on Clifton Campus

**Text:**

Our facilities

With over £8 million invested, our computer science students will study in facilities designed to very high specifications with a variety of electronic and communication laboratories. From artificial intelligence to game technology, our courses span the whole spectrum of computer science. You’ll study in state-of-the-art facilities at our Clifton Campus, which includes a robot arena, games consoles, networking and security, and human-interactive technology labs. It’s a self-contained campus with all the mod cons and equipment you might need. You can count on the support of industry veterans from across the sector – from Fujitsu Systems to the US Department of Homeland Security. You can apply your learning to work placements, live industry briefs and research projects, as you gain real-world experience and enhance your career prospects in computing.

**Source:** Computer Science Facilities

**Metadata:** About

**Text:**

About the facilities: The Computer Science department offers a transformative learning environment that focuses on practical application through the use of advanced computer science facilities. It provides ten specialist teaching laboratories and 350 workstations running Windows and Linux that are specifically designed to empower you to engage deeply in your coursework and enable groundbreaking research.

As you embark on your academic journey, you will have access to a wide range of high-performance computers, specialized software, and advanced equipment. This immersive learning experience will allow you to actively apply theoretical concepts in real-world scenarios, ensuring you develop the practical skills and competencies necessary to thrive in the rapidly evolving IT industry.

Furthermore, the computer science facilities are thoughtfully equipped with modern amenities and ergonomic workspaces, providing you with a comfortable environment for your studies. Collaborative spaces and dedicated project rooms are also available to facilitate group work and foster a vibrant community of like-minded individuals, enabling you to engage in learning and brainstorming sessions.

All our labs and facilities are supported by experienced technicians. You can confidently explore your subject interests and tackle complicated challenges, pushing the boundaries of what is possible in the realm of computer science.

SmartNTU (Smart Home): A typical home instrumented with a range of sensors; detecting everything from the opening of a cupboard to getting up from bed. Data is logged continuously so that it can be processed and evaluated. All sensor data are stored in a dedicated server which can be accessed remotely. Experiments can be conducted over a period of hours or even days, as this is a fully functional home.

Hydra Cluster: The Hydra High Performance Computing (HPC) facility is made out of 320 Field Programmable Gate Array’s (FPGA’s) and networked control computers. The facility is a reconfigurable HPC system which can be used for numerous highly parallelised applications.

Robot arena: A robot arena with state-of-the-art assistive robotic platforms (e.g. iit iCub, SoftBank Pepper, SoftBank NAO, Temi, Rethink Baxter, Rethink Sawyer, Double 3) with specialist computing labs including networking, security, games, data science and high-performance computing. In addition to the assistive robots, the group has access to the following robot platforms as well: FIFISH V6 VR Underwater Rov Robot, Universal Robot UR5, Unitree Go1 robot dog, Pepper and NAO robots, among many others.

**Source:** Specialist software at NTU

**Metadata:** Specialist software available to students includes

**Text:**

We provide access to all kinds of industry-standard and specialist software, which includes but is not limited to EnCase, 3D StudioMax, XNA Xbox development suite. Adobe Creative Suite (Flash, After Effects, Photoshop), Omnivati AI enabled digital Systematic Innovation Tool, and the Unreal and Half-life game engines .

**Source:** Labs at NTU

**Metadata:** Specialist technology laboratories

**Text:**

Our specialist dedicated laboratories cater to different specialist areas within computer science and each include state-of-the-art equipment.

Games Development Laboratory: A space where students learn a variety of software engineering techniques for games from low level programming languages for fast-games to high level computer network environments for distributed games.

Security and Forensics Networking Laboratory: Studio with a specialist networking and communications equipment from a broad range of providers, giving students a practical experience in a range of technologies.

Mobile and app development laboratory: Available for students studying Computer Science, Software Engineering, Games Tech and Computing. Offers powerful PC's running software and emulators for app development and prototyping.

Human interactive technology laboratory: Specialist facility containing a number of technologies involved in the study, planning and design of products and devices to improve and support human interaction with computers. The laboratory includes state-of-the-art stereo projection equipment as well as a dedicated final year project laboratory.

Data Science and High Powered Computing (HPC) suite: Available for all the students within the department, includes high powered PCs with powerful GPUs. Students can learn about AI Big Data, Databases, Programming, and Nodal Computing.

Interactive media and graphics laboratory: Available for students studying Computer Science, Software Engineering, Games Tech and Computing. The space contains a high-end equipment students can learn games programming, Digital 3D, Graphics, Interaction Design and Internet Application.

Virtual reality laboratory: A green studio with virtual reality headsets, screens and access to graphical editing packages.

Robotics Laboratory: Studio with various PC running software for robotics development, including domestic and industrial robotics. Used mainly by master's and PhD students working on robotics projects.

**Source**: ISTEC

**Metadata**: About

**Text**:

Interdisciplinary Science and Technology Centre (ISTeC)

Interdisciplinary Science and Technology Centre (ISTeC) is a two-floor facility of laboratories dedicated to teaching and research for Bioscience, Computer science, Chemistry and Sports Science.

The Interdisciplinary Science and Technology Centre is a state-of-the-art facility, located at our Clifton Campus, developed as part of an 13milion investment from the government and Nottingham Trent University. It's used for teaching biosciences, chemistry, computer science, and sport science, offering modern laboratories equipped with the highest quality IT and Wi-Fi technology. With its wide range of uses, this impressive STEM centre is essential in enriching students' academic experience.

Facilities with real world application

Focused on research and teaching, building brings together collaborators such as students, researchers, staff and businesses for project-based work and its application to the real-world. Split over three floors, there are facilities for:

Computer Science facilities

Includes a vast computer network with high-speed internet access for all students and staff. Whether you are delving into the immersive world of virtual reality, developing captivating gaming experiences, NTU's comprehensive software laboratories empowers you to transform abstract concepts into tangible results.

**Source:** Interactive Systems Research Group (ISRG)

**Metadata:** About ISRG

**Text:**

Interactive Systems Research Group (ISRG)

Unit(s) of assessment: Computer Science and Informatics

School: School of Science and Technology

Overview

The Interactive Systems Research Group focuses on the development of new technologies for the cognitive and physical rehabilitation of users within the real world, and the promotion of their mental wellbeing. The Interactive Systems Research Group is led by Professor David Brown. This is a multi-disciplinary endeavour bringing together researchers and clinicians in virtual environments, serious games, games-based learning, assistive technologies, location-based services, mobile applications, robotics, health psychology and computational intelligence.

Areas of strength:

Serious games and virtual environments: Developing virtual environments and games for promoting cognitive and perceptual skills in people with intellectual disabilities, to change attitudes and behaviours in health and social related contexts, and for stroke rehabilitation. Assessing the efficacy of serious games in educational and health contexts to address one of the major barriers to their adoption

Assistive technologies: Improving the accessibility of solutions and related services, and to determine whether the latest access techniques and new interaction modalities will provide a more accessible, more exploitable and deeply embeddable approach in mainstream ICT

Robotics: Investigating the role of engagement in using robots with students with profound and multiple learning disabilities, the use of assistive technologies in controlling robots and the development of intelligent multimodal systems to promote communicational skills

Location-based services: Investigating the role of location-based and games technologies for route learning and the development of accurate spatial mental models and maps to develop improved confidence and abilities in independent travel for people with a wide range of impairments

User-centred design and user experience: Designing interactive systems involving users in co-design, and delivering systems, which focus on User Experience goals

Smart devices for education: Investigating the use of tablet computers in education and developing apps and methods to integrate the use of technologies within the classroom, and in clinical practice

Areas of growing activity:

Using sensor data to determine personalised learning for students with cognitive impairments and autism: Our advanced learning systems analyse the affective state of learners and the non-linearity of the presentation of learning materials to influence the effectiveness of the learning process and engagement of learners

Using Games and affective state to reduce abnormal movements in home based rehabilitation for stroke patients: Our previous research has shown that adherence to exercise and accuracy of movement in unsupervised home rehabilitation settings are significant barriers to using co-designed games as tools for the rehabilitation of the upper limb and hand following stroke when formal therapies stop. We propose a novel solution: first harnessing multimodal data to assess patient state of affect and using this information to adapt game mechanics to maintain engagement and optimise adherence to exercise; and second by providing in-game feedback to encourage increasingly accurate exercise over a period of time designed with patients and therapists

Further details on related research projects can be viewed on the ISRG website.

There are further details and downloads of other games and software developed by the group in the ISRG Software Repository.

Research Dissemination Events: ISRG is a founding member of the Interactive Technologies and Games conference (ITAG). ITAG brings together academics and practitioners working with interactive technologies to explore and innovate within the areas of education, health and disability. It is an affiliated conference to the International Society of Virtual Rehabilitation.

Research Excellence Framework (REF) 2021

The Interactive Systems Research Group submitted an impact case study to REF 2021. 80% of NTU's research submitted to the Computer Science and Informatics Unit of Assessment was assessed to be either world-leading or internationally excellent in terms of quality.

Related staff

Group Leader: Professor David J Brown is the leader for the Interactive Systems Research Group (ISRG)

Dr Mathew Bates is a member of the Interactive Systems Research Group, Dr Andreas Oikonomou is a member of the Interactive Systems Research Group, Dr Bev Cook is a member of the Interactive Systems Research Group, Dr Simon Schofield is a member of the Interactive Systems Research Group, Andy Pierson is a member of the Interactive Systems Research Group, Professor Eiman Kanjo is a member of the Interactive Systems Research Group, James Lewis is a member of the Interactive Systems Research Group, Andy Burton is a member of the Interactive Systems Research Group, Nick Shopland is a member of the Interactive Systems Research Group, Amin Safaei is a member of the Interactive Systems Research Group, Pratik Vyas is a member of the Interactive Systems Research Group,

**Source:** Computational Intelligence and Applications Research Group (CIA)

**Metadata:** About the Computational Intelligence and Applications Research Group (CIA)

**Text:**

Computational Intelligence and Applications Research Group (CIA)

Unit(s) of assessment: Computer Science and Informatics

School: School of Science and Technology

The Computational Intelligence and Applications (CIA) Research Group at Nottingham Trent University is conducting research on computationally intelligent methods and techniques for real-world applications targeting enhanced living and society. The CIA group is led by Professor Ahmad Lotfi, who is also the Head of the Computer Science department.

The CIA Research Group has expertise in the analysis and use of methods from the field of artificial intelligence, such as artificial neural networks, evolutionary algorithms and data analysis to solve real-world problems from science and engineering. The research group has also expertise in smart environments, ambient assistive technologies, pervasive computing, intelligent modelling, control and robotics.

The CIA Research Group has access to research facilities, including high-performance computing, a variety of sensors, actuators and communication devices, different assistive robotic platforms and a smart home facility.

The CIA Research Group focuses on a wide range of areas. This includes but is not limited to, Artificial Intelligence (AI) Applications, Machine Learning (ML) Tools and Techniques,

Deep Learning and Transfer Learning, Generative Adversarial Networks (GAN), Smart Environments and Ambient Intelligence (AmI), Independent Living, Assistive Robotics, Abnormality Detection, Quantum Computing, Sustainable Computing, And the Internet-of-Everything-Everywhere (IoE2), among many others

The CIA Research Group group seeks to address the challenges which require computationally intelligent methods and techniques for real-world applications that can make a difference in lives and society, including:

Support independent living of older adults by means of equipping homes with sensor networks to monitor system user behaviour, provide assistive solutions to patients suffering from mild cognitive impairment, assistive robotics application to help with independent living, providing technological solutions that promote a sustainable environment, in accordance with UK and UN strategies and targets concerning issues such as net-zero emissions and sustainable production in industry, agriculture and forestry.

The CIA Research Group is supported by external research income from the EPSRC, InnovateUK, NIHR, EU Horizon and other industrial partners, among many others.

Core services we offer include: Consultancy services to help businesses and organisations implement artificial intelligence technologies, develop strategies, and identify opportunities. Analyse large amounts of data and develop models to extract insights from that data. Our expertise is mainly in analysing the data related to healthcare. Develop and train machine learning and deep learning models to be used for a variety of applications, including image recognition, natural language processing (NLP), and speech recognition. Develop and implement robotics and automation technologies. Considering the diversity in the application of robotics, our expertise is the area of assistive robotics. Develop computer vision technologies, including object recognition, facial recognition, and image analysis. Help businesses and organisations navigate the ethical and governance challenges associated with AI technologies.

Partners that have worked with The CIA Research Group include Just checking, innovate UK, nottingham city council housing services, tunstall, UKRI engineering and physical sciences research council, aburnet, among many others.

The CIA Research Group has worked with external collaborators from:

Tokyo Metropolitan University, Japan

University of Coimbra, Portugal

Institute of Systems and Robotics, Portugal

Instituto Pedro Nunes, Portugal

Nottinghamshire Wildlife Trust

Environment Agency

Trent Rivers Trust

NTU Smart Wireless Innovation Facility (SWIFt)

The CIA Research Group has many active projects, including me, the ROBIN chatbot. Other projects include:

Intelligent Care Guidance and Learning Services Platform for Informal Carers of the Elderly (iCarer) - The iCarer project developed a personalised and adaptive platform to offer informal carers support by means of monitoring activities of daily care, as well as their psychological state, and providing an orientation to help them improve the care provided. Monitored information will be registered by means of home-installed and personal sensors, which will be as inconspicuous as possible for the house inhabitants.

Energy Efficiency in Social Housing - Nottingham City Homes (NCH), in partnership with Nottingham Trent University (NTU) has conducted this research to better understand energy usage in social housing. The project aims to monitor energy usage of a sample of current NCH housing stocks.

Underwater Plastic Detection - Plastics thrown away by humans are normally transported to the oceans by rivers. It is not clear how much plastic is transported every year from land to sea because of a lack of metrics and standard monitorisation techniques.

Digital Displays of Nature to Improve Mental Health - Use of biophilic design and smart environments to recognise the human instinct to connect with nature and the mental health benefits this can bring, such as reducing stress, anxiety and depression, and improving cognitive function.

Quantum Intelligence Research - We recognise the great potential of the massive parallelism provided by Quantum Computing in the near future. The research on Quantum Intelligence in CIA focuses on exploring the new advancements of AI-Quantum hybrid methods that can lead to novel real-world intelligent systems in (but not limited to) smart living, cryptography, finance, and chemical structure design. The research has also extended to quantum-inspired algorithms where High-Power Computers (e.g., our Hydra Cluster facilities or cloud-based resources) are being used as simulation platforms for quantum intelligence.

CIFAKE - Classification and Explainable Identification of AI-Generated Synthetic Images

AI-generated images have rapidly improved recently, and the ability to detect them is becoming a critical necessity to ensure the authenticity and trustworthiness of image data. AI models have even beaten humans in art competitions!

Signature Verification - Machine learning is often employed to detect real and forged signatures. However, robotic arms and generative models can overcome these systems and mount false-acceptance attacks. Our research results show that there are exclusive behaviours to human and robotic forgers, suggesting that a system trained wholly on human forgeries can be easily attacked by robots to gain false-positive verification. The results after fine-tuning are effective, showing that such attacks can be prevented now, rather than after the first consumer robot-based forgery crime has been committed.

Fall Detection and Privacy-preserving Human Behaviour Monitoring Through Thermal Vision - Thermal Sensor Array (TSA) in combination with appropriate Computational Intelligence techniques, can be used as an approach for a low-cost, non-contact, and privacy-preserving human behaviour monitoring.

Professor Ahmad Lotfi (Professor and Head of Department) is the leader of the The CIA Research Group

Dr David Adama is a Senior Lecturer in Computer Science and member of the The CIA Research Group. Dr Jordan J. Bird is a Senior Lecturer in Computer Science and member of the The CIA Research Group. Dr Ismahane Cheheb is a Lecturer in Computer Science and member of the The CIA Research Group. Dr Joao Filipe Ferreira is a Senior Lecturer in Computer Science and member of the The CIA Research Group. Dr Isibor Kennedy Ihianle is a Senior Lecturer in Computer Science and member of the The CIA Research Group. Dr Pedro Machado is a Senior Lecturer in Computer Science and member of the The CIA Research Group. Dr Jon Robinson is a Principal Lecturer in Computer Science and member of the The CIA Research Group. Dr Neil Sculthorpe is a Senior Lecturer in Computer Science and member of the The CIA Research Group. Dr Amir Pourabdollah is a Senior Lecturer in Computer Science and member of the The CIA Research Group. Dr Salisu Yahaya is a Senior Lecturer in Computer Science and member of the The CIA Research Group. Dr Abdallah Naser is a Lecturer in Computer Science and member of the The CIA Research Group. Dr Farhad Fassihi-Tash is a Senior Lecturer in Computer Science and member of the The CIA Research Group.

**Source:** CCBI

**Metadata:** Introduction

**Text:**

Cognitive Computing and Brain Informatics Research Group (CCBI)

Unit(s) of assessment: Computer Science and Informatics

School: School of Science and Technology

Welcome to Cognitive Computing and Brain Informatics

The Group activity is centred around brain research, mainly brain computer interfacing (BCI) including EEG hyperscanning, and body sensor networking (BCI) for body and brain abnormality identification. Recently our main interest has been on seizure identification and stimulation of brain epileptogenic networks. This is through developing new adaptive and cooperative signal processing, model and data driven AI, and single- or multi-channel, multi-dimensional, and multimodal biomedical signal decomposition. The Group activity is centred around brain research, mainly brain computer interfacing (BCI) including EEG hyperscanning, and body sensor networking (BCI) for body and brain abnormality identification. Recently our main interest has been on seizure identification and stimulation of brain epileptogenic networks. This is through developing new adaptive and cooperative signal processing, model and data driven AI, and single- or multi-channel, multi-dimensional, and multimodal biomedical signal decomposition.

Our Focus

Human-centred AI for Cognitive Computing and Brain Informatics

Brain research (looking at functional, personal, behavioural, psychological and physiological disorders)

Brain functional data and signal (EEG, MEG, fMRI, joint EEG-fMRI) processing, understanding, and machine learning (seizure, dementia, autism, mental fatigue, sleep, pain, depression)

Brain-computer interfacing (BCI), brain EEG hyperscanning, mental and physical rehabilitation, and rehabilitative assessment

Analysis, processing, and learning of human related data

Multimodal data analysis and learning (EEG-fMRI, audio-video, medical data)

Body sensor networking

Signal processing, machine learning, and sensor networks are the major tools in biomedical data (signal, image, and patient peripheral information) understanding, recognition, and classification. In CCBI the major research focus is on developing ground breaking approaches to Human-centred AI, Brain research (looking at functional, personal, behavioural, psychological and physiological disorders), brain functional data and signal (EEG, MEG, fMRI, joint EEG-fMRI) processing, understanding, and machine learning (brain responses to various stimuli, seizure, dementia, autism, mental fatigue, sleep, pain, depression, mild cognitive impairment – MCI and Alzheimer,) brain-computer interfacing (BCI), brain EEG hyperscanning, mental and physical rehabilitation, and rehabilitative assessment, analysis, processing, and learning of human related data, multimodal data analysis and learning (EEG-fMRI, audio-video, medical data), and body sensor networking.

Core services we offer include:

Developing tools and algorithms for identification, classification, and scoring of generative and degenerative brain states, diseases and abnormalities.

Assisting with multi-modal real-time medical data analysis for monitoring, diagnosis, prediction of alarming states, and decision making.

Developing tools for Brain-computer interfacing particularly for rehabilitation.

Developing model-driven (for data fusion), data driven (for deep learning), and diffusion techniques (for cooperative learning) for AI and machine learning.

Speech processing for source separation, human identification, speech recognition, and speaker identification.

Medical image enhancement, fusion, anomaly detection, and diagnosis.

Advanced signal processing including processing of biomedical signals, speech, music, and medical images.

The Cognitive Computing and Brain Informatics Research Group (CCBI) is led by Dr. Mufti Mahmud. Associated members of the Cognitive Computing and Brain Informatics Research Group (CCBI) include Dr Isibor Kennedy Ihianle, Alicia Falcon Caro, Dr. Kayode Owa, Dr Ahmet Omurtag, Professor Alex Sumich, Dr. Joao Filipe Ferreira, and Dr. Jason Smith

Metadata: Projects within the he Cognitive Computing and Brain Informatics Research Group (CCBI)

The Cognitive Computing and Brain Informatics Research Group (CCBI) has several active projects including:

Sensor based gait recognition

New wearable sensors can circumvent the limitations of video-based gait recognition often used for rehabilitative assessment.

Body sensoring network

The information from wearable sensors can reveal physical, behavioural, and mental abnormalities and be integrated within an IoT system.

Intracranial brain stimulation

By processing the information from multichannel electrocorticogram mat the seizure networks in deep brain can be identified and localised.

Localization of brain event potentials for audio stimulation

Many human mental states and abnormalities can be identified by evaluating the brain responses to audio, visual, and haptic stimulations as the basis for brain-computer interfacing.

The Cognitive Computing and Brain Informatics Research Group (CCBI) has partnered with the NHS, The Future Care UK ltd, Kings College London, Imperial College London, University of Nottingham, RIKEN CBS – Centre for Brain Science.

The Cognitive Computing and Brain Informatics Research Group (CCBI) has external collaboration activity with:

Electrical Engineering, Imperial College London

Neuroscience, King’s College London

Electronics, Royal Holloway University London

Electrical Engineering, Edinburgh University, Edinburgh, Scotland

Computer Science, Essex University, Essex

RIKEN Brain Institute, Japan

University of Toronto, Canada

Electrical and Electronic Engineering, National University of Singapore, Singapore

Computer Science, Shiraz University, Iran

Electrical Engineering, Ilam University, Iran

**Source:** CSRG

**Metadata:** Introduction

**Text:**

Cyber Security Research Group (CSRG)

Unit(s) of assessment: Computer Science and Informatics

School: School of Science and Technology

About the Cyber Security Research Group (CSRG)

The Cyber Security Research Group (CSRG) is a dynamic team of seasoned professionals dedicated to researching and implementing effective solutions to safeguard against cyber threats.

Our diverse team comprises of experts in various areas of cyber security, including but not limited to: network security, cryptography and quantum cryptography solutions, threat intelligence and modeling, malware analysis, penetration testing,

regulated and trustworthy artificial intelligence systems,

The Cyber Security Research Group (CSRG) is committed to advancing the field of cyber security through cutting-edge research and development. We focus on creating innovative and practical solutions to address complex security challenges faced by organisations across the world today. By staying at the forefront of the latest technological advancements and emerging threats, we provide our clients with tailored solutions that meet their unique needs and requirements. Our research and development efforts are focused not on only addressing current security challenges but also anticipating future ones. We collaborate with academic institutions, industry partners, and government agencies to share knowledge and provide resources to drive innovation. Our goal is to provide our clients with the highest level of protection against cyber threats, ensuring their information assets are secure and their operations are uninterrupted. By partnering with CSRG, you can trust that your organisation is in capable hands.

Metadata: Team

Text:

The Cyber Security Research Group (CSRG) is led by Dr. Ali Sadiq. Members of the Cyber Security Research Group (CSRG) include, Dr. Omprakash Kaiwartya, Tawfik Al-Hadhrami, Dr. Dr. Nemitari Ajienka, Dr. Xiaoqi Ma, Dr. Colin Wilmott, Dr. Alexandros Konios, Dr. Richard Otuka, Dr. Adnan Kiani, John Kingston, and Dr. Evtim Peytchev

Metadata: Partners and Collaborators of Cyber Security Research Group (CSRG)

Text:

Cyber Security Research Group (CSRG) has collaborated with Ofgem, Innovate UK, UCL, National Grid, University of Warwick, National Cyber Security Centre NCSC, De Montfort University, Cyber Security Centre, Catapult Company, University of Ha'il, Saudi Arabia, Taibah University, Saudi Arabia, Horiba – Mira, University of Manchester, University of Ulster, Cardiff Metropolitan University, CICESE (Centro de Investigacion Cientifica y de Educacion) – Mexico, Torrens University Australia, Artificial Intelligence Research and Optimization, Indian Institute of Technology Roorkee, Indian Institute of Technology Delhi, University of Central Lancashire, Cobac Security, JMVL Ltd, Jawaharlal Nehru University New Delhi

Metadata: Projects

Text:

The Cyber Security Research Group (CSRG) has several active projects that include:

Drive with Confidence

A Safe and Secure Driving System to Mitigate Remote Vehicle Hijacking Risks. The system focuses on:The development of a secure vehicular communication system considering physical layer and protocol level security as well as network segmentation approach.

Integrating an in-vehicle intrusion detection system using artificial intelligence to monitor the vehicle's network for suspicious activity, such as attempts to connect to the vehicle's control systems from an unauthorised connection or device.

PRAVE Project (PRoactive Authentication and Verification Embedded Model for Critical Cyber-Physical Systems). This Research and Development project will innovate a new proactive security model for protecting cyber-physical systems in the CNI using a trustworthy artificial intelligent approach. PRAVE will focus on proactive authentication and verification protocol with the involvement of some of the physical aspects from the connected smart things within the CNI.

TrustMe Project: This project has developed a secure and trustworthy AI platform suitable for AI developers and data scientists, which provides a scoring mechanism to measure the quality and trust levels of datasets and AI/ML algorithms during the development and deployment phases. The TrustMe platform is running based on a local-host web application with enabled features for designing, developing, and implementing explainable and trustworthy AI applications. TrustMe platform also offers a data quality score using the Quality of Data (QoD) estimator.

Cyber Security for Smart EV Charging Network: The core objective of the E-Mobility Cyber Security project is to foster NTU-Industry research collaboration toward EV-centric smart, secure, and green mobility. The expertise-centric research collaboration consists of three working groups including vehicular communication for EV charging management, cyber security of charging infrastructure, and data analytics for cyber risk prediction.

DroNET Cyber Security for Next-Generation Drone Networking: DroNET is targeting to innovate novel security techniques for connected drone communication to enable a range of next-generation drone use cases to realize securely connected and autonomous drones. A technology resource team will be built up in the department utilizing the drone-centric communication networking, robotics, and security expertise at NTU.

LiNET-Visible Light Secure Networking for Connected Vehicles: The LiNET project is targeting to innovate visible light communication-enabled networking framework for enabling CAV traffic environments. Building on our existing research on connected vehicles, this team will focus on developing a secure visible light communication framework for enabling CAV.

CyberMIND: An AI-based platform helping cyber security professionals to detect, predict and manage stress. Showing cyber professionals and cyber teams how to reduce and manage stress levels. Improving your resilience and wellbeing helping you manage cyber crime from a position of strength.

**Source:** Open Day Guide Clifton Campus

Metadata: Tips

Text:

5 STEPS to the open day experience:

1. CHECK-IN: Use our campus map to help you navigate around the event or ask a member of staff or a Student Ambassador in for directions.

2. JOIN A WELCOME TALK: A member of our University Executive Team will welcome you to NTU, outline what the University has to offer, and explore why we’re one of the most popular universities in the UK.

3: GET TO KNOW YOUR COURSE: Attend a subject talk, get hands-on experience in a taster session, and visit your subject hub to chat with academics and current students.

4: EXPLORE NTU AND NOTTINGHAM: Take a student-led campus tour of our unique campus and facilities. Tours take around 35 minutes and give you the chance to ask our current students about their experience of life at NTU.

5: FIND YOUR NEW HOME: Make your way to our accommodation to see where you might be living at NTU.

Metadata: Guide

Text:

SUPPORT LIKE NO OTHER

To explore your individual support needs, talk to our dedicated Student Support Services team, who help all of our students to make the most out of their time with NTU.

Careers and employability: speak to the team to get help with your career goals. NTU is one of the UK’s most employment-focused universities, offering extensive careers and employment support to our students and graduates. We are ranked in the top 10 for work experience (RateMyPlacement Awards 2023).

OUR GRADUATE PROMISE: NTU is committed to ensuring all our students realise their ambitions. In addition to our sector-leading support and assessed work-like experience across every course, we offer all our graduates a paid internship if they are not in employment 12 months after graduation.

NTU SPORT: Whether you’re a keen athlete, want to keep fit whilst you study or just looking to try a new sport for fun, NTU Sport offers something for everyone. We’re in the top 10 in the British Universities and Colleges Sport Leagues (2023) and have outstanding sports facilities at our City and Clifton campuses

NTSU CLUBS AND SOCIETIES: Run by students for students, Nottingham Trent Students’ Union (NTSU) is an essential part of any student’s time with NTU. You can take a full tour of the NTSU facilities via our campus tours.

**Metadata:** About Nottingham

**Text:**

Welcome to Nottingham! Whilst you are here, you might want to factor in some time to view Nottingham and discover what makes our city the perfect place for students to live and study.

Nottingham has a distinctive reputation as one of the UK’s top student destinations. Friendly, compact, and fantastically well-positioned, it’s a city that’s got it all – amazing experiences, life-changing opportunities, and a spirit all of it’s own.

Here are just three reasons why Nottingham is an amazing student city: One of the UK’s top six student cities, ranking ahead of Sheffield, Liverpool, and Leeds (QS Student Cities Index 2024). 14 consecutive Purple Flag awards (2010-present), for the diversity, entertainment, and security of its nightlife. A city that cares about sustainability and is on track to reach Net Zero as early as 2028.

EXPLORE THE CITY: Nottingham city centre is only four miles from Clifton Campus and a five-minute walk from our City Campus. Why not take a student led tour of the city? Nottingham is a city in central England’s Midlands region. It’s known for its role in the Robin Hood legend and for the hilltop Nottingham Castle Museum and Art Gallery, rebuilt many times since the medieval era. In the Lace Market area, once the centre of the world’s lace industry, the Galleries of Justice Museum has crime-related exhibits. Wollaton Hall is an ornate Elizabethan mansion with gardens and a deer park. Robin Hood, from Nottingham, is the inspiration for my design as a chatbot!

Why NTU students love Nottingham:

Bustling with students – Nottingham is home to two major universities, attracting over 60,000 students to the city. A major sporting city You’ll always be close to the action in Nottingham with two major football clubs, Trent Bridge, the National Ice Centre and the National Water Sports Centre.

With a 10,000-capacity arena, the famous Rock City, and a host of intimate venues, Nottingham is the beating heart of live music. Students that stay over the summer can also attend the Download Festival at nearby Donington Park.

With more than 20% of the city devoted to public parks and gardens, a relaxing stroll or bike ride is never too far away. Our Brackenhurst Campus is also based in scenic Southwell, and home to some of Nottinghamshire’s best pubs, shops and restaurants.

Nottingham is consistently ranked as one of the top shopping destinations in the UK.There’s the stylish stores of Victoria Centre shopping centre, high street favourites around Old Market Square and vintage gems in Hockley.

The city centre boasts a convenient tram system and an award-winning bus network. You’ll also find train and coach stations, making travelling further afield easy.

Nottingham is a city built on culture. Here, art galleries break all the rules, cinemas are independent, and music is loud. From Anish Kapoor’s stunning Sky Mirror to funky murals and the bold architecture that frames the Lace Market, there is something to inspire everyone.

TRAVELLING BETWEEN CAMPUSES

How can I get from Clifton Campus (you are here!) to the City Campus? It’s easy: Board the NCT number 1 bus from the NTU Clifton (CL93) stop and get off at Nottingham Beastmarket Hill (B2) in Old Market Square. The bus stop is a short walk from City Campus. Show your open day guide or event booking confirmation email to access this free bus service. All visitors attending the open day can travel for free.

**Source:** Computer Science at Nottingham Trent University

**Metadata:** Introduction

**Text:**

Computer Science

As the digital economy continues to grow, and new and increasingly powerful technologies emerge, computer science underpins more and more of modern life. At NTU, we’ll use industry projects and collaborative research to help you develop the skills and experience that employers are looking for.

About Computer Science: From artificial intelligence to game technology, our courses span the whole spectrum of computer science. You’ll study in state-of-the-art facilities at our Clifton Campus, which includes a robot arena, games consoles, networking and security, and human-interactive technology labs. It’s a self-contained campus with all the mod cons and equipment you might need. You can count on the support of industry veterans from across the sector – from Fujitsu Systems to the US Department of Homeland Security. You can apply your learning to work placements, live industry briefs and research projects, as you gain real-world experience and enhance your career prospects in computing.

**Metadata:** Careers in Computer Science

**Text:**

Careers in Computer Science

The industry-focused nature of our courses ensures you stand out from the crowd when it comes to job applications and pursuing your future career. Our graduates are widely respected amongst employers and are perceived as having a competitive edge due to the hands-on approach of our teaching. Our recent graduates have secured roles at companies including: Next Retail Ltd, Boots UK, Cisco Systems, Schlumberger, Experian, BT, Rockstar Games, Worldwide Clinical Trials UK Ltd, American Express, and the UK Government

Our recent graduates have gone into a wide variety of job roles including: Business Analyst, Programmer, Project Software Implementation Officer, Web Developer, Games Tester, Graduate Game Development and Programmer, Software Engineer, Cyber Security Analyst, Product Consultant, among many more.

**Source:** Different Types of Computer Science courses at NTU

**Metadata:** The types of courses we offer

**Text:**

NTU’s Department of Computer Science offers many different types of Computer Science course. These include: Computer Science - MComp (Hons), Computer Science - BSc (Hons), Computer Science (Games Technology) - BSc (Hons), Computer Science (with foundation year) - BSc (Hons), Computer Science - Artificial Intelligence - BSc (Hons), Computer Science - Artificial Intelligence (with foundation year) - BSc (Hons), Computer Science - Games Technology (with foundation year) - BSc (Hons), Computer Science and Mathematics - BSc (Hons), Computer Science and Mathematics (with foundation year) - BSc (Hons), Computing - BSc (Hons), Computing (with foundation year) - BSc (Hons), Cyber Security - BSc (Hons), Cyber Security (with foundation year) - BSc (Hons), Data Science - BSc (Hons), Data Science (with foundation year) - BSc (Hons), Digital and Technology Solutions Professional (Software Engineering) Level 6 Degree Apprenticeship - BSc (Hons), Data Scientist Level 6 Degree Apprenticeship - BSc (Hons), Mathematics with Data Science - BSc (Hons), Mathematics with Data Science (with foundation year) - BSc (Hons), Software Engineering - BSc (Hons), Software Engineering (with foundation year) - BSc (Hons),

**Metadata:** Computer Science MComp (Hons)

**Text:**

Level(s) of Study: Undergraduate

Typical Offer: 120 - 128 UCAS tariff points

UCAS Code(s): G410 (full-time); G411 (sandwich)

Start Date(s): Please ask a member of staff for the start date of this course, our staff here at the open day will be able to tell you that information.

Duration: Four years full-time, five years with placement

Study Mode(s): Full-time / Sandwich

Campus: Clifton Campus

What you’ll study on the Computer Science Masters MComp (Hons) course: This course combines undergraduate and postgraduate content and is designed to cover computer science foundation subjects and then build on this foundation with postgraduate level material in the final year. You will acquire the skills to become an independent learner and gain advanced skills in specialised areas such as artificial intelligence, cloud computing, advanced analysis and design, embedded systems and programming. A group project to manage and deliver a significant multidisciplinary engineering project will help you to further develop your communication, project management and teamworking skills. In addition you will undertake a substantive individual project where you will be required to develop software or hardware in an innovative manner.

You have the option to transfer between the MComp degree and the BSc degree during the first two taught years of the course, subject to your performance and your chosen module in year two.

If you take the Artificial Intelligence module in your final year you will participate in the Microsoft certified Azure AI Fundamentals program as part of your studies. The program is designed as a blended learning experience, combining instructor-led training with online materials accessed on the Microsoft Learn platform. Microsoft will sponsor your cloud subscription, course materials and certification test fees for no cost to you. You will also get the Microsoft Azure AI Fundamentals certificate when you graduate – a valuable addition to your CV.

**Metadata:** Computer Science BSc (Hons)

**Text:**

Level(s) of Study: Undergraduate

Typical Offer: 112 - 120 UCAS tariff points

UCAS Code(s): 350D (full-time); G400 (sandwich)

Start Date(s): Please ask a member of staff for the start date of this course, our staff here at the open day will be able to tell you that information.

Duration: Three years full-time / four years with placement

Study Mode(s): Full-time / Sandwich

Campus: Clifton Campus

Why study Computer Science at NTU? This course is accredited by the BCS, The Chartered Institute for IT to Chartered Engineer (CEng) and IT Professional (CITP) status. You will undertake a year-long paid work placement. Previous students have worked with prestigious companies such IBM. Our Computer Society will enable you to share ideas with other like-minded and ambitious students in the UK. You will share material in common with the BSc (Hons) Software Engineering and BSc (Hons) Computer Science (Games Technology) in your first year. This will enable you to review your studies and choose the pathway that you enjoy best.

What you’ll study on the Computer Science BSc (Hons) course: You will learn core skills concerning the production of computer programmes and applications, as well as specialist knowledge in areas such as: artificial intelligence, service-centric and cloud computing, analysis and design. All of the courses within the Computer Science cluster share a common first year. This will provide you with the flexibility to review your pathway once you have started studying. At the end of year one, you can choose to transfer to BSc (Hons) Software Engineering or BSc (Hons) Computer Science (Games Technology).

If you perform well there is also an opportunity to transfer to our four-year MComp (Hons) Computer Science course, which combined undergraduate and postgraduate material.

100% of our BSc (Hons) Computer Science (SW) students were in highly skilled roles 15 months after graduation (Graduate Outcomes Survey 2020/21).

**Metadata:** Computer Science (with foundation year) BSc (Hons)

**Text:**

Level(s) of Study: Undergraduate

Typical Offer: 72 UCAS tariff points

UCAS Code(s): I100 (full-time)

Start Date(s): Please ask a member of staff for the start date of this course, our staff here at the open day will be able to tell you that information.

Duration: Four years full-time

Study Mode(s): Full-time

Campus: Clifton Campus

You'll develop the practical skills and knowledge in programming, maths and engineering that will get you off to a flying start when you move onto BSc (Hons) Computer Science in your second year. 100% of our BSc (Hons) Computer Science (SW) students were in highly skilled roles 15 months after graduation (Graduate Outcomes Survey 2020/21).

**Metadata:** Computer Science - Artificial Intelligence BSc (Hons)

**Text:**

Level(s) of Study: Undergraduate

Typical Offer: 112 - 120 UCAS tariff points

UCAS Code(s): G414 (full-time); G415 (sandwich)

Start Date(s): Please ask a member of staff for the start date of this course, our staff here at the open day will be able to tell you that information.

Duration: Three years full-time / four years with placement

Study Mode(s): Full-time / Sandwich

Campus: Clifton Campus

The Computer Science - Artificial Intelligence BSc (Hons) course is aimed at students who are interested and inspired by the new AI technologies and want to work to become a leader in meeting the challenges posed by AI and big data. This course will support students with a broad range of skills required to work in the field of AI - including machine learning, natural language processing, problem solving and other cognitive techniques, as well as an understanding of the professional and ethical considerations that surround AI. It is designed to enable you to develop the knowledge and skills that are necessary for, specifically, a career in the industry sectors undertaking the design of intelligent computer systems and emerging smart technologies and, generally, for a broad range of careers in industrial, commercial and scientific computing. The BSc (Hons) Computer Science (Artificial Intelligence) degree has been designed to meet the accreditation requirements of BCS – the Institute for IT, for both CITP and partial CEng registration. During your course you will be equipped with the knowledge and skills necessary for careers in digital and technology occupations across a wide variety of different sectors in industrial, commercial and scientific computing. You will develop the skills and knowledge required to design and implement robust, efficient, quality software. You will then develop the knowledge and skills needed to face new technological and ethical challenges associated to the emerging new intelligent systems, and to adapt them for the real-world problems at both local and global scales.

Professional accreditation for Computer Science - Artificial Intelligence BSc (Hons): Accreditation of courses by the BCS provides independent recognition that the course content is relevant to the IT profession. It ensures a level of standardisation across Higher Education institutions so that the courses meet the needs of employers. A key part of the accreditation is the incorporation of professional, ethical, social and legal issues relating to computing. Graduating from a BCS accredited degree allows students to apply for professional membership of the BCS, giving an accelerated route to Chartered status. Employers often look for accredited degrees, and accredited degrees are recognised internationally.

Develop your portfolio on the Computer Science - Artificial Intelligence BSc (Hons): The course puts theory into practice through skills development relevant to the modern world, in particular, the use of artificial intelligence (AI), machine learning and cognitive computing in an increasing number of industry sectors. It offers skills development as an integral part of the curriculum and as preparation for the world of work. As well as practical skills necessary for the industries using AI, you will develop transferable skills which will make you suitable for general graduate employment in an ever-changing job market.

Research informed teaching within Computer Science - Artificial Intelligence BSc (Hons): As well as giving you a robust general education in Computer Science, with emphasis on AI design and development, the Computer Science (Artificial Intelligence) degree will provide the knowledge and skills necessary for research and development in other technically advanced fields of computing.

Take a work placement on Computer Science - Artificial Intelligence BSc (Hons): The salaried placement year is an important feature of the sandwich version of the course. The work experience gained from a placement year can give you a distinct advantage on graduating. It requires a successful application process through a company. The NTU Employability team provide support in finding a placement that is right for you and support all stages in the placement application process. Students can transfer between full-time and sandwich versions of the course up to the end of Level 5 (year 2).

**Metadata:** Computer Science - Artificial Intelligence (with foundation year) BSc (Hons)

**Text:**

Level(s) of Study: Undergraduate

Typical Offer: 72 UCAS tariff points

UCAS Code(s): I400 (full-time)

Start Date(s): Please ask a member of staff for the start date of this course, our staff here at the open day will be able to tell you that information.

Duration: Four years full-time

Study Mode(s): Full-time

Campus: Clifton Campus

In Computer Science - Artificial Intelligence (with foundation year) BSc (Hons), you'll develop the practical skills and knowledge in programming, maths and engineering that will get you off to a flying start when you move onto BSc (Hons) Computer Science (Artificial Intelligence) in your second year.

Computer Science - Artificial Intelligence (with foundation year) BSc (Hons) is aimed at students who are interested and inspired by the new AI technologies and want to work to become a leader in meeting the challenges posed by AI and big data. This course will support students with a broad range of skills required to work in the field of AI - including machine learning, natural language processing, problem solving and other cognitive techniques, as well as an understanding of the professional and ethical considerations that surround AI.

Computer Science - Artificial Intelligence (with foundation year) BSc (Hons) is designed to enable you to develop the knowledge and skills that are necessary for, specifically, a career in the industry sectors undertaking the design of intelligent computer systems and emerging smart technologies and, generally, for a broad range of careers in industrial, commercial and scientific computing. The BSc (Hons) Computer Science (Artificial Intelligence) degree has been designed to meet the accreditation requirements of BCS – the Institute for IT, for both CITP and partial CEng registration. The course puts theory into practice through skills development relevant to the modern world, in particular, the use of artificial intelligence (AI), machine learning and cognitive computing in an increasing number of industry sectors. It offers skills development as an integral part of the curriculum and as preparation for the world of work. As well as practical skills necessary for the industries using AI, you will develop transferable skills which will make you suitable for general graduate employment in an ever-changing job market. Research informed teaching as well as giving you a robust general education in Computer Science, with emphasis on AI design and development, the Computer Science (Artificial Intelligence) degree will provide the knowledge and skills necessary for research and development in other technically advanced fields of computing.

During Computer Science - Artificial Intelligence (with foundation year) BSc (Hons), you will be equipped with the knowledge and skills necessary for careers in digital and technology occupations across a wide variety of different sectors in industrial, commercial and scientific computing. You will develop the skills and knowledge required to design and implement robust, efficient, quality software. You will then develop the knowledge and skills needed to face new technological and ethical challenges associated to the emerging new intelligent systems, and to adapt them for the real-world problems at both local and global scales.

**Metadata:** Computer Science - Games Technology (with foundation year) BSc (Hons)

**Text:**

Level(s) of Study: Undergraduate

Typical Offer: 72 UCAS tariff points

UCAS Code(s): I611 (full-time)

Start Date(s): Please ask a member of staff for the start date of this course, our staff here at the open day will be able to tell you that information.

Duration: Four years full-time

Study Mode(s): Full-time

Campus: Clifton Campus

On Computer Science - Games Technology (with foundation year) BSc (Hons) you'll develop the practical skills and knowledge in programming, maths and engineering that will get you off to a flying start when you move onto BSc (Hons) Computer Science (Games Technology) (with foundation year) in your second year.

The Computer Science - Games Technology (with foundation year) BSc (Hons) course builds on and shares many modules with our Computer Science degree. We then combine this with specialised games technology modules to produce a distinct and unique course – perfect if you are interested in creative applications of computer technology. The combination of a solid foundation in traditional computer science and games technology knowledge allows you to keep your options open regarding jobs and career paths. Our graduates are just as likely to move into well-paid careers with Investment banks or Motorsports companies as they are to join the ranks of a AAA games Studio.

Study Computer Science - Games Technology (with foundation year) BSc (Hons) and you will acquire the advanced skills and knowledge needed to design and implement various computer systems. You’ll mainly be software engineering using C++. You will also learn to program using Python, Java and C#, providing you with a fantastic portfolio of development skills demanded by employers today. You will be introduced to the techniques behind the production of 3D game assets and develop your games using Unreal Engine 5, Unity and the Android SDK. You will take these skills to the next level by developing serious and educational games for real-world clients and creating immersive experiences for VR headsets like the Meta Quest3, Pico3 and Vive Pro Eye.

Within Computer Science - Games Technology (with foundation year) BSc (Hons) we assume no prior knowledge of computer programming and accept students from a wide range of academic backgrounds. We will provide all the help and support you need to develop and succeed as a coder. Beginning with Python but moving rapidly to C++ will equip you with the technical skills required to engage with the specialised games tech modules which will follow in subsequent years. During the second year, you will write code that integrates with networks and operating systems; you will complete modules focused on game programming and 3D asset creation and will be guided through advanced maths and graphical programming techniques. You will also work as part of a team to develop a major project, often by applying game technology to the design of solutions to real-world problems. Many students integrate these projects with competitions or networking events like Global Game Jam or the Microsoft Imagine cup. In your final year, around one-third of your time will be spent working on your major project; this is a great opportunity to focus and specialise in a chosen area of interest with recent projects as diverse as advanced visual FX techniques, EEG mind control of games and games for rehabilitation and therapy. You can also study modules on virtual reality, Mobile app development, physics simulation, serious games and artificial intelligence, including the Microsoft Certified Azure AI fundamentals course available to all our students.

**Metadata:** Computer Science and Mathematics BSc (Hons)

**Text:**

Level(s) of Study: Undergraduate

Typical Offer: 112 - 120 UCAS tariff points

UCAS Code(s): 350Z (full-time); GG4C (sandwich)

Start Date(s): Please ask a member of staff for the start date of this course, our staff here at the open day will be able to tell you that information.

Duration: Three years full-time/ four years with a placement

Study Mode(s): Full-time

Campus: Clifton Campus

Mathematics and computer science go hand in hand, especially in an increasingly digital world. Being able to code someone else’s algorithms is useful but we’ll teach you to design and implement your own – taking your skills to the next level. You’ll get to grips with the building blocks of mathematics such as algebra, calculus and statistics but there’s so much more to it than that. As well as developing your complementary computing skills, the course also strengthens your knowledge of mathematics, making you a better coder. We’ll give you plenty of opportunities to get hands-on and practice. In your final year, you’ll have a choice of options from both the computer science and mathematics sides of your course. The modules you choose and your choice of project allow you to create your own pathway dependent on your interests. Our Computer Science and Mathematics degree is current and relevant to the needs of business. Our close links with industry means that, if you wish, you’ll have the opportunity to take up job placements with some of the world’s leading companies. We offer BSc (Hons) Computer Science and Mathematics (with foundation year) which you can apply for if you don't meet the entry criteria for this course.

97% of our mathematics students were in work or further study 15 months after graduation (Graduate Outcomes Survey 2020/21).

We are Top 20 in the UK for teaching quality in Mathematics (Times and Sunday Times Good University Guide 2024)

Join our Mathematics Society, and you’ll have the opportunity to take part in regular events hosted on campus by the local branch of the Institute of Mathematics and its Applications.

What you’ll study on Computer Science and Mathematics BSc (Hons): We are in the process of a digital revolution. The way we interact with the world around us is changing at supersonic speed, and mathematicians and computer scientists are at the forefront of this cutting edge technology – spotting opportunities and solving problems in every area of our daily lives. There has always been synergy between Mathematics and Computer Science and today these complementary skill sets are instrumental in creating a connected world. In Years One and Two you’ll explore a wide range of mathematical techniques and applications. Then, in your final year, you’ll get to choose a number of specialist modules, depending on your own personal preferences and career aspirations. Every week you’ll attend lectures, seminars, practical sessions and workshops. This includes surgery sessions where you’ll meet with your lecturer in small groups to discuss any problems or work through challenging topics. The rest of your time will be spent carrying out independent study such as reading textbooks and lecture notes, and working on exercises. Contact hours Year 1 - lectures/seminars/workshops (33%) and independent study (67%) Year 2 - lectures/seminars/workshops (32%) and independent study (68%) Year 3 - lectures/seminars/workshops (18%) and independent study (82%) A placement year may be taken between year 2 and year 3 of study

**Metadata:** Computing BSc (Hons)

**Text:**

Level(s) of Study: Undergraduate

Typical Offer: 104 - 112 UCAS tariff points

UCAS Code(s): G401 (sandwich); 35E0 (full-time)

Start Date(s): Please ask a member of staff for the start date of this course, our staff here at the open day will be able to tell you that information.

Duration: Three years full-time / four years with a placement

Study Mode(s): Full-time / Sandwich

Campus: Clifton Campus

Within Computing BSc (Hons), we’ll give you the best of both worlds by bringing together internet-based development with computing skills vital to supporting businesses. You’ll have the perfect combination of theory and practice as you explore Internet technologies, database systems and application development– all backed up with lots of practical experiences. Develop your practical skills by taking part in multimedia and virtual reality projects. Our graduates are knowledgeable about the development of software and able to design and manage complex information systems. This course is accredited by the BCS, The Chartered Institute for IT to Chartered IT Professional (CITP) status. You will have the opportunity to do a year long paid work placement. Recent examples have included Hewlett Packard and Siemens.

100% of our BSc (Hons) Computing (FT) students were in work or further study 15 months after graduation (Graduate Outcomes Survey 2020/21)

96% of BSc (Hons) Computing (FT) students were positive about the academic support on their course (NSS2023)

The Computing BSc (Hons) course is highly practical and provides a strong grounding in computing fundamentals. It gives you a comprehensive understanding of database systems, e-commerce, business information systems and Internet technologies. Practical skills developed will include involvement in multimedia and virtual reality projects. You'll cover the following networking and communications technology, business and information systems and interactive / multimedia development. If you take the Artificial Intelligence module in your final year you will participate in the Microsoft certified Azure AI Fundamentals program as part of your studies. The program is designed as a blended learning experience, combining instructor-led training with online materials accessed on the Microsoft Learn platform. Microsoft will sponsor your cloud subscription, course materials and certification test fees for no cost to you. You will also get the Microsoft Azure AI Fundamentals certificate when you graduate – a valuable addition to your CV.

**Metadata:** Computing (with foundation year) BSc (Hons)

**Text:**

Level(s) of Study: Undergraduate

Typical Offer: 72 UCAS tariff points

UCAS Code(s): I101

Start Date(s): Please ask a member of staff for the start date of this course, our staff here at the open day will be able to tell you that information.

Duration: Four years full-time

Study Mode(s): Full-time

Campus: Clifton Campus

You'll develop the practical skills and knowledge in programming, maths and engineering that will get you off to a flying start when you move onto BSc (Hons) Computing in your second year. In Computing (with foundation year) BSc (Hons), we’ll give you the best of both worlds by bringing together internet-based development with computing skills vital to supporting businesses. You’ll have the perfect combination of theory and practice as you explore Internet technologies, database systems and application development– all backed up with lots of practical experiences. Develop your practical skills by taking part in multimedia and virtual reality projects. Our graduates are knowledgeable about the development of software and able to design and manage complex information systems. This course is highly practical and provides a strong grounding in computing fundamentals. It gives you a comprehensive understanding of database systems, e-commerce, business information systems and Internet technologies. Practical skills developed will include involvement in multimedia and virtual reality projects. You'll cover the following networking and communications technology, business and information systems and interactive / multimedia development.

**Metadata:** Cyber Security BSc (Hons)

**Text:**

Level(s) of Study: Undergraduate

Typical Offer: 104 - 112 UCAS tariff points

UCAS Code(s): I120 (full-time); I121 (sandwich)

Start Date(s): Please ask a member of staff for the start date of this course, our staff here at the open day will be able to tell you that information.

Duration: Three years full-time / four years with placement

Study Mode(s): Full-time / Sandwich

Campus: Clifton Campus

Protecting organisations from cyber-attacks is a valuable skill and graduates are highly sought after and it’s one we’ll prepare you for. You’ll explore how to detect and identify security risks before building on this with developing your own preventative measures – all with plenty of opportunities to test your solutions in our industry-standard facilities. Building on a solid foundation covering network and system technologies, this course covers the core knowledge and skills needed to protect businesses against security threats. You will develop a detailed understanding of computer security issues, the detection of computer-based crime and the preservation and interpretation of digital evidence of crime. This course is accredited by the BCS, The Chartered Institute for IT to Chartered IT Professional (CITP) status. There's an opportunity for a year-long paid work placement and the School has strong links with local industry.

The Cyber Security BSc (Hons) course aims to enable you to identify security risks and preventative measures in technological solutions. You will learn the basic principles and practice of collecting computer data as evidence of computer crime and how systems operate in terms of their software and hardware infrastructure. Based on this you will learn how to manage such systems as a system administrator specialising in ensuring security. Your knowledge will be further developed to give you a good appreciation of security issues and the steps organisations need to take to protect themselves from security breaches and crime.

**Metadata:** Cyber Security (with foundation year) BSc (Hons)

**Text:**

Level(s) of Study: Undergraduate

Typical Offer: 72 UCAS tariff points

UCAS Code(s): I130 (full-time)

Start Date(s): Please ask a member of staff for the start date of this course, our staff here at the open day will be able to tell you that information.

Duration: Four years full-time

Study Mode(s): Full-time

Campus: Clifton Campus

You'll develop the practical skills and knowledge in programming, maths and engineering that will get you off to a flying start when you move onto BSc (Hons) Cyber Security in your second year after completing the foundation year.

**Metadata:** Data Science BSc (Hons)

**Text:**

Level(s) of Study: Undergraduate

Typical Offer: 112 - 120 UCAS tariff points

UCAS Code(s): I124 (full-time); I125 (sandwich)

Start Date(s): Please ask a member of staff for the start date of this course, our staff here at the open day will be able to tell you that information.

Duration: Three years full-time / four years with placement

Study Mode(s): Full-time / Sandwich

Campus: Clifton Campus

Unleash the Power of Data: Become an Expert in Data Science at NTU At NTU, we understand that big data, machine learning, and artificial intelligence are transforming industries. That's why our goal is to equip you with the skills and knowledge to become an expert in data science. Through our comprehensive program, you will develop a strong foundation in computer science, enabling you to extract valuable insights from data. Using a diverse set of statistical, algorithmic, and predictive tools, you will gain the ability to transform raw data into practical and actionable information, capable of predicting trends and driving outcomes. Are you ready to take on the challenges presented by big data and artificial intelligence? Our curriculum will empower you to develop data-driven solutions that optimize business processes, as well as harness the power of data to support human decision-making. But our approach goes beyond theory. You will have hands-on experience, applying your knowledge in real-world scenarios with a focus on the industrial application of computational intelligence. This practical experience, combined with the technical nature of our course, will prepare you to actively engage in industrial, commercial, scientific, and technological research and development of intelligent systems. Join NTU and unleash your potential as a leader in the dynamic field of data science. Shape your future by harnessing the transformative power of data.

We offer BSc (Hons) Data Science (with foundation year) which you can apply for if you don't meet the entry criteria for this course.

Metadata: Data Science (with foundation year) BSc (Hons)

**Text:**

Level(s) of Study: Undergraduate

Typical Offer: 72 UCAS tariff points

UCAS Code(s): I126

Start Date(s): Please ask a member of staff for the start date of this course, our staff here at the open day will be able to tell you that information.

Duration: Four years full-time

Study Mode(s): Full-time / Sandwich

Campus: Clifton Campus

About Data Science (with foundation year) BSc (Hons): Programming, science and maths – the building blocks you’ll focus during your foundation year, preparing you to move onto BSc (Hons) Data Science in your second year. You’ll take part in a series of individual and group projects alongside your modules. It’s a hands-on way of learning that will develop your problem solving and creative thinking skills and helps to build other transferable skills such as team-working. At NTU, we understand that big data, machine learning, and artificial intelligence are transforming industries. That's why our goal is to equip you with the skills and knowledge to become an expert in data science. Through our comprehensive program, you will develop a strong foundation in computer science, enabling you to extract valuable insights from data. Using a diverse set of statistical, algorithmic, and predictive tools, you will gain the ability to transform raw data into practical and actionable information, capable of predicting trends and driving outcomes. Are you ready to take on the challenges presented by big data and artificial intelligence? Our curriculum will empower you to develop data-driven solutions that optimize business processes, as well as harness the power of data to support human decision-making. But our approach goes beyond theory. You will have hands-on experience, applying your knowledge in real-world scenarios with a focus on the industrial application of computational intelligence. This practical experience, combined with the technical nature of our course, will prepare you to actively engage in industrial, commercial, scientific, and technological research and development of intelligent systems. If you find data science isn’t for you, we can support you to move into one of our other computer science courses at the end of your foundation year.

**Metadata:** Mathematics with Data Science BSc (Hons)

**Text:**

Level(s) of Study: Undergraduate

Typical Offer: 112 - 120 UCAS tariff points

UCAS Code(s): G120 (full-time); G121 (sandwich)

Start Date(s): Please ask a member of staff for the start date of this course, our staff here at the open day will be able to tell you that information.

Duration: Three years full-time / four years with placement

Study Mode(s): Full-time / Sandwich

Campus: Clifton Campus

Welcome to the world where mathematics meets the cutting-edge of data science and computer programming. This course gives you the essential knowledge and skills demanded by today's rapidly evolving industries. You’ll be learning from an award-winning teaching team dedicated to your success, consistently winning teaching awards. As you progress, you'll have the flexibility to specialise with a range of optional modules and a final-year project in a subject of your choice. Our technology focused teaching gives you the power to visualise and interrogate data in different ways through using graphics tablets, virtual reality, and 3D printing. To address the shortages in the field of data science, as outlined by industry and the Government, this course gives you skills which are in high demand. With a solid mathematical foundation, you not only learn the tools and techniques needed, but also understand their application, setting you apart in the competitive job market. Focusing on real-world applications of mathematics and data science will sharpen your analytical, investigative and problem-solving skills. The Mathematics with Data Science BSc (Hons) course shares common modules in your first year you can transfer MMath (Hons) Mathematics, BSc (Hons) Mathematics, or BSc (Hons) Mathematics with Statistics.

Every year we offer a small number of Mathematics Undergraduate Research Scholarships (MURS), giving successful applicants funding for a six-to-eight-week placement in one of our research teams. This is an excellent opportunity for you to further your research interests and contribute to the academic activities of the mathematics department.

Our active student-run Mathematics society allows you to be part of a vibrant community with peer support, team learning, and mentorship. You’ll also have the opportunity to participate in regular events hosted on campus by the local branch of the Institute of Mathematics and its Applications.

97% of our mathematics students were in work or further study 15 months after graduation (Graduate Outcomes Survey 2020/21).

Top 20 in the UK for teaching quality in Mathematics (Times and Sunday Times Good University Guide 2024)

On Mathematics with Data Science BSc (Hons), you will study the core strands of Linear Algebra, Probability and Statistics, Discrete Mathematics, Artificial Intelligence, and Database Engineering. These foundations provide you with a robust understanding of mathematics, essential for handling and interpreting complex data.

**Metadata:** Mathematics with Data Science (with foundation year) BSc (Hons)

**Text:**

Level(s) of Study: Undergraduate

Typical Offer: 72 UCAS tariff points

UCAS Code(s): G122 (full-time)

Start Date(s): Please ask a member of staff for the start date of this course, our staff here at the open day will be able to tell you that information.

Duration: Four years full-time

Study Mode(s): Full-time

Campus: Clifton Campus

You’re right at the start of your exciting journey and we’re here to build your mathematics, computing and programming science skills. These will provide you with the foundations to excel when you move onto BSc (Hons) Mathematics with Data Science in your second year.

**Metadata:** Software Engineering BSc (Hons)

**Text:**

Level(s) of Study: Undergraduate

Typical Offer: 112 - 120 UCAS tariff points

UCAS Code(s): 350Y (full-time); G600 (sandwich)

Start Date(s): Please ask a member of staff for the start date of this course, our staff here at the open day will be able to tell you that information.

Duration: Three years full-time / four years with a placement

Study Mode(s): Full-time / Sandwich

Campus: Clifton Campus

Software is critical to the industry. It can save lives, improve performance and help us predict future events. We’ll give you the skills and the knowledge to create high-quality software with plenty of opportunities to access our industry-standard facilities to test it. And that's what employers expect to see from you. Someone who is confident, work-ready and already has the software skills needed. There continues to be a steady demand from industry and commerce for well-qualified software engineers. In fact, according to eSkills UK, there will be a shortage in the next ten years. This software engineering degree seeks to meet that need by producing graduates with the precise combination of skills required to design and develop robust, efficient, high-quality software.

Why choose Software Engineering BSc (Hons)? It is accredited by the BCS, The Chartered Institute for IT to Chartered Engineer (CEng) and IT Professional (CITP) status. There's an opportunity for a year-long paid work placement with prestigious companies such as GE Consumer Finance and IBM. You will have access to contact and share ideas with other computer games students throughout the country through our own Computer Society. This course shares a common first year with BSc (Hons) Computer Science and BSc (Hons) Computer Science (Games Technology) allowing you the flexibility to review your pathway once you've started studying. You will have access to ultra-modern facilities, equipment and software. Our student work can be ground-breaking, and innovative and consistently attracts industry attention.

What will I study on the Software Engineering BSc? You will learn core skills concerning the production of computer programs and applications, as well as specialist knowledge in areas such as software engineering and analysis and design. All of the courses within the Computer Science cluster share a common first year. This will provide you with the flexibility to review your pathway once you have started studying. At the end of year one, you can choose to transfer to BSc (Hons) Computer Science or BSc (Hons) Computer Science (Games Technology).

If you take the Artificial Intelligence module in your final year will participate in the Microsoft-certified Azure AI Fundamentals program as part of your studies. The program is designed as a blended learning experience, combining instructor-led training with online materials accessed on the Microsoft Learn platform.

92.9% of BSc Software Engineering graduates who entered employment are in a 'High Skilled' role 15 months after finishing their degrees. (Graduate Outcome Survey 2019/20)

**Metadata:** Software Engineering (with foundation year) BSc (Hons)

**Text:**

Level(s) of Study: Undergraduate

Typical Offer: 72 UCAS tariff points

UCAS Code(s): I301 (full-time)

Start Date(s): Please ask a member of staff for the start date of this course, our staff here at the open day will be able to tell you that information.

Duration: Four years full-time

Study Mode(s): Full-time / Sandwich

Campus: Clifton Campus

You'll develop the practical skills and knowledge in programming, maths and engineering that will get you off to a flying start when you move onto BSc (Hons) Software Engineering in your second year. 92.9% of BSc Software Engineering graduates who entered employment are in a 'High Skilled' role 15 months after finishing their degrees. (Graduate Outcome Survey 2019/20). You will learn core skills concerning the production of computer programs and applications, as well as specialist knowledge in areas such as software engineering and analysis and design.

**Metadata:** Computer Science (Games Technology) BSc (Hons)

**Text:**

Level(s) of Study: Undergraduate

Typical Offer: 112 - 120 UCAS tariff points

UCAS Code(s): 350W (full-time); G440 (sandwich)

Start Date(s): Please ask a member of staff for the start date of this course, our staff here at the open day will be able to tell you that information.

Duration: Three years full-time, four years with placement

Study Mode(s): Full-time / Sandwich

Campus: Clifton Campus

Computer Science (Games Technology) BSc (Hons) builds on and shares many modules with our Computer Science degree. We then combine this with specialised games technology modules to produce a distinct and unique course – perfect if you are interested in creative applications of computer technology. The combination of a solid foundation in traditional computer science and games technology knowledge allows you to keep your options open regarding jobs and career paths. Our graduates are just as likely to move into well-paid careers with Investment banks or Motorsports companies as they are to join the ranks of a AAA games Studio. This course is accredited by the BCS, The Chartered Institute for IT to Chartered Engineer (CEng) and IT Professional (CITP) status.

We focus on the Industrial and medical applications of game technologies; our student work can be groundbreaking and innovative and consistently attracts industry attention.

You will have access to superior facilities, equipment and software, including our Vicon Motion Capture Suite, our green screen and our VR-equipped Human Interaction Technology Lab.

The Computer Science (Games Technology) BSc (Hons) course shares a common first year with BSc (Hons) Computer Science and BSc (Hons) Software Engineering, allowing you the flexibility to review your pathway once you've started studying.

100% of our BSc (Hons) Computer Science (Games Technology) (SW) students were in work or further study 15 months after graduation (Graduate Outcomes Survey 2020/21).

Within Computer Science (Games Technology) BSc (Hons), You will build a foundation of core computer science and software engineering skills in your first year. We assume no prior knowledge of computer programming and accept students from a wide range of academic backgrounds. We will provide all the help and support you need to develop and succeed as a coder. Beginning with Python but moving rapidly to C++ will equip you with the technical skills required to engage with the specialised games tech modules which will follow in subsequent years. During the second year, you will write code that integrates with networks and operating systems; you will complete modules focused on game programming and 3D asset creation and will be guided through advanced maths and graphical programming techniques. You will also work as part of a team to develop a major project, often by applying game technology to the design of solutions to real-world problems. Many students integrate these projects with competitions or networking events like Global Game Jam or the Microsoft Imagine cup. In your final year, around one-third of your time will be spent working on your major project; this is a great opportunity to focus and specialise in a chosen area of interest with recent projects as diverse as advanced visual FX techniques, EEG mind control of games and games for rehabilitation and therapy. You can also study modules on virtual reality, Mobile app development, physics simulation, serious games and artificial intelligence, including the Microsoft Certified Azure AI fundamentals course available to all our students.

**Source:** Disability and inclusion services at Nottingham Trent University

**Metadata:** What is a disability?

**Text:**

Disability and Inclusion Services at NTU supports students with a diverse range of support needs.

People with these conditions often don't consider themselves to have a disability, and therefore do not think that disability support, or disabled students allowance relates to them or is something they can access. The most common reason for students not receiving the support they need at university is that they didn't know that they were entitled to it.

Disability and Inclusion Services at NTU supports students with a diverse range of support needs such as:

Any Long Term Health Conditions, Visual & Hearing Impairments, Physical Mobility & Access needs, ADHD, Specific Learning Differences such as Dyslexia, Dyspraxia, Dyscalculia and Tourettes, Mental Health conditions - a broad spectrum of diagnoses from Anxiety to Personality Disorders, Autism & Autism Spectrum Conditions

Some students come to university having had these conditions their whole life, some have had a more recent diagnosis, and some come to university with no diagnosis. Every situation is unique.

**Metadata:** Autism and AuDHD support at Nottingham Trent University

**Text:**

Working together to improve the University experience for students with Autism Spectrum Conditions (ASC) and for students who have both autism and attention deficit hyperactivity disorder (AuDHD).We believe that autistic students should be respected and valued for their positive qualities as well as being supported in the areas they find difficult. Therefore, we are committed to supporting and developing every aspect of you through innovative, research driven support. We strongly feel that support should be as individual as you are, so you are at the centre of our support.

There is a range of support available for autistic students including: a school based Disability Officer, in-house and external one-to-one support, exam arrangements, social activities including a weekly lunch club, transition support for applicants.

We have a Disability Officer dedicated to working with students with an autism spectrum condition. They will be your key point of contact while studying at NTU, and can support you to get an Access Statement in place – as well as arranging your support needs.

Advice sessions - Our Disability Officers offer advice sessions for students who want to get their support set up or to discuss support and help at university. They can also help with matters such as: applying for Disabled Students Allowances (DSAs), orientation and accessing your course, getting your access statement and exam arrangements in place academic liaison.

Specialist DSA funded one-to-one support - As a student with a disability, you may be eligible for a Disabled Students Allowance (DSA). DSAs are intended to cover any extra costs or expense that arise because of your disability while studying, as well as recommending any non-medical helper support you might need.

Specialist mentoring - Mentors work with our students on a one-to-one basis, addressing the barriers to learning created by autism spectrum conditions. Examples of these barriers include anxiety and stress, concentration difficulties, time management issues, and establishing an appropriate work-life balance. A mentor’s role is to promote independent learning, as well as empowering the student to manage their work-load. Specialist DSA funded support is provided through a mix of internal support and external agency support.

**Metadata:** ADHD Support at Nottingham Trent University

Text:

Advice sessions - If you have evidence of an ADHD diagnosis, or are on a waiting list for a diagnosis, please book an advice session with us to find out what support is available. We offer advice sessions throughout term-time and our services include: information on applying for Disabled Students' Allowances (DSAs), access statements and exam arrangements, accessibility, information on the support available.

**Metadata:** Dyslexia and other Specific Learning Difficulties (SpLDs)

**Text:**

Nottingham Trent University is committed to providing a fully inclusive learning environment for all students.

The SpLD Support Team offers advice and support to students with SpLDs such as: Dyslexia, Dyspraxia, Dyscalculia, Irlen Syndrome

This support enables you to develop relevant skills and strategies over the course of your time at University, and to support you in achieving your full learning potential while studying here and in your future career. The team of experienced professionals understand the many positives of SpLDs, and the areas where assistance may be useful to allow you to make the most of your university studies.

Staff can offer advice on: Applying for Disabled Students’ Allowances (DSAs) to fund your support, DSA funded Specialist One to One Study Skills Support, How to access academic support within NTU, e.g., Library Study Support, How to implement reasonable adjustments as recommended in your evidence (e.g. extra time in exams), Diagnostic evidence requirements

**Metadata:** Long-term mental health conditions

Text:

There is support at NTU for students who have long term diagnosed mental health conditions and are looking for in-person support and reasonable adjustments to help them access their course. The Mental Health Mentoring and Access team support students with long term diagnosed mental health conditions to get support and exam arrangements in place.

If you have a long term diagnosed mental health condition and want to find out what support is available to you we offer advice sessions throughout term-time. Our services include: Support with applying for Disabled Students' Allowances (DSAs), Access statements and exam arrangements, Accessibility, Academic liaison

**Metadata:** Physical, sensory and long term health conditions

**Text:**

The Disability Support Service offers advice and information for individual current and prospective disabled students on the types of support available. We have a dedicated disability officer for each school. They will be your main point of contact in the disability team and can support you to liaise with academic schools, services and outside agencies, and help to coordinate any additional requirements you may have.

**Source:** Placement advice

**Text:**

Will students get help with placements? Yes, students can get help with placements. There is a Department at NTU specifically for supporting student careers - called "Employability". They have an online website for finding placements called InPlace. Employability will source placements from business contacts and other job adverts, check through them to make sure it's suitable for our students, and upload them to InPlace. This means there is a single database where students can find a placement. There is also 1-to-1 support available from Employability to help students with job applications as well as Department initiatives to support career development. Students can also source their own placements but Employability and the Department will check the placement first to make sure it is the right kind of opportunity. Throughout the placement year, there is a minimum of 3 contact points with students by a member of staff within the Department. This is to make sure that they can have someone to talk to if there are any issues and we can monitor placement progress. Placement students are invited back for a day before they re-join as a final year student. This is to help them network with other placement students so they know who their peers are since they will be joining an entirely different cohort in their final year. We also provide information to placement students on their final year projects and remind them of other relevant university information.

Will students fall behind academically if they go on placement? It is very unlikely that students will fall behind if they go on a placement. Placements are only approved if they are directly related to the student's course of study. We expect our placement students to learn industry-relevant technical and soft skills, some of which may be more advanced than what they would encounter at university. We also provide students with the opportunity to achieve a Level 5 Diploma in Professional Practice. This is a piece of coursework due in after the placement (but before final year) and consists of a work log, a report on their professional development, and a presentation. The Diploma allows students to practice their academic writing and presenting skills before they start their final year. The coursework they will have in final year will contain quite a lot of academic writing, so it is a good opportunity for them to get back into university-style work.

Can students go on placement even if they are on the full-time course? What about funding? Yes, all students are encouraged and supported to find placements. If a student on a full-time course completes a placement year, they will then be moved onto the sandwich course and be able to graduate with a sandwich degree. The Student Loans Company may provide a Tuition Fee Loan, and more information can be found on the UK Government website. If you have specific questions on funding, then we recommend that you speak to Nottingham Trent's "Student Money" Team.

Can students do their placments outside the UK? Can I do my placement abroad? Yes, if they can find a company to offer them the placement. Our employment team will support students with preparing their application for a placement either in the UK or abroad.

Do we have any students who have done their placements in other countries? Yes! Many NTU students have decided to do their placement abroad.

What percentage of students do the sandwich year? It varies from one year to another. But, usually, 30% of our students sign up for the placement. We normally have more places available than students interested in placements.

Is the placement guaranteed? No, industrial placements are not guaranteed. The placement is a year in industry and students are expected to submit their application and attend an interview with the company. The employment team provide training sessions on how to prepare for interviews.

Can I apply for the placement even if I have selected a course without placement? Yes, all of our courses are offered with the option for placement. Students will be informed about the placement during the second year of their studies and they can decided accordingly.

**Source:** Concerns and worries from students or their parents, guardians, or carers

**Text:**

If you are worried about not fitting in, or not being able to make friends - The Nottingham Trent University Student Union offers a lot of welcome events to give students a comfortable environment to meet each other and get settled in. This includes "give it a go" events where students can try something new without it costing much money, and more information can be found on the NTU Student Union website. Student societies at NTSU are also a great way of getting to know each other. Nottingham Trent University runs a Welcome Week which has timetabled icebreaker-type workshops to help students get to know each other and staff. Students are put into small tutorial groups for their first year of study which are usually about 15 or so students per group, and they will have a personal tutor who will help support and guide them throughout their first year. These tutorial groups are often another way in which students can make friends.

If you are worried about not being proactive, not achieving at university, and I worry that the student might fail their course - Personal tutors follow university policy which provides guidance on timescales and emails for when to reach out to students who haven't attended their classes. This includes templates for what to write in emails. This ensures that staff have the same policy when it comes to providing support. We also offer guidance on our website for how parents, guardians, and carers can play an important role in encouraging the development of students.

**Source:** Advice for parents, guardians, and carers

Text:

At NTU, we feel parents and carers have a very important role to play in supporting the journey into university. Many parents and carers want to know what they can do to support that transition, so we have provided this information to get you started. We want to work together to ensure the time before your student starts at NTU is useful, and encourages trying a range of getting ready activities to ensure a smooth transition. This information tells you about the role that you can play in supporting your student as they move into higher education. In Student Support Services, we understand the common concerns that parents and carers can have as their student makes the transition to university, adulthood and independent living. Our experience is that parents and carers of students with additional support needs often have worries about how their student will settle in and cope with the university life, so we have also included information about the help available for both general or specialist support. We encourage students to build their own resilience and to prepare for life after university, by talking to NTU to resolve any issues in the first instance; therefore, we ask parents and carers to help prepare for transition to university by supporting this practice.

As a parent or carer of a prospective NTU student, how should I help them prepare for university life? Parents/carers of students with disabilities and learning differences play a vital role in preparing them for university life and supporting them throughout their studies. Support is very different at university than it is at school and college so it is important that you support them over the summer to make sure they are prepared for all aspects of university life and have spoken to the Disability & Inclusion team regarding any support they may need setting up.

Declaring a disability, learning difference or support need to NTU: Over the summer we email all students who have declared a disability, learning difference or support need on their application. Applicants: If the student has not declared any support need at application stage, they won't be sent this information, but they can complete a form to let us know they are coming so we can include them in our communications. Once the form has been submitted, they will receive an email with the next steps on it. Please speak to staff for more information on this.

Financial support: Once they have submitted their UCAS application, help them to apply for student finance and the Disabled Students’ Allowances. Don’t wait until they have been offered a place at university - the information is all available at www.direct.gov.uk,

Reading NTU emails: New students receive a lot of information over the summer regarding starting at NTU to their personal email accounts. As such, information regarding support can be missed and opportunities to meet the team may not be taken up.

Once they are enrolled, it is useful for students to have the My NTU app on their phone. This is to keep on top of communications and appointments as, after enrolment, all emails will be sent to the student's NTU email address.

As a parent or guardian of a prospective student, what type of practical things could I be doing to help my young person prepare for university life? It's never too early to start nurturing independent living skills such as: cooking, budgeting, supermarket shopping, personal hygiene, getting up in the morning, working washing machines, programming central heating, taking out the rubbish, travelling to university from their accommodation, give the student every opportunity to take responsibility for these tasks. Lack of independent living skills is all too often the reason that a student will struggle in their first year of university and this can have a huge impact on their studies.

As a parent or guardian of a prospective student, what type of things do we need to talk about before my young person arrives at NTU? It would be useful to talk through some of the big decisions they need to make, such as course choice and accommodation options. Encourage them to consider all the options and make a decision that is right for them. Many of our students find that living at home, at least for the first year, gives them the best chance to get used to university study without having to get used to independent living at the same time. Choosing a course which suits them and is enjoyable matters, as it will reduce the inevitable pressures that arise in the process of securing a degree. Students with neurodiversities are often best served short-term and long-term when they follow their 'passions' and find a vocational niche within that area which can be nurtured.

What are the options for accomodation? Many first year students opt to live in university halls, which are large, self-catering residences. This is a good way to meet other people and makes budgeting easier as utility bills are usually included. However, larger residences don’t suit everyone. Alternatively, they might think about renting a room privately in a shared house. They might even rent a flat on their own – although this can be quite an expensive option. Disabled students are entitled to stay in halls of residence for the duration of their degree course. However, this needs to be rebooked on a yearly basis. Studio flats are also available but are limited. Living at home can be a good option for some students, at least for the first year. This enables them to get used to university study without having to get used to independent living at the same time, and to retain regular family support during their transition to higher education.

Is support at university very different to that provided at school? Be prepared for a change in the way support is delivered and arranged. At school, you may have had regular contact with a Special Educational Needs Coordinator (SENCO) and have played an active role in deciding what support was required. At University, decisions about the support required are made by the student, together with a Disability Officer. However, we welcome any thoughts you might want to share or any suggestions of what has proved helpful in the past. Any technology, mentoring, BSL or Study Skills for example will need to be applied for in advance and funded through the Disabled Students Allowance. If you think they will need personal support to live independently at university, such as help with dressing, personal hygiene, cooking and cleaning, this cannot be funded via Disabled Students’ Allowances. Instead, you will need to contact your local Social Services team to discuss a package of support. We strongly recommend that this support is put in place before arriving at university to ensure a smooth transition.

What is Disabled Students’ Allowance (DSA)? Students with a disability, learning difference, or diagnosed additional support need may be eligible for a Disabled Students Allowance (DSA). DSAs are intended to cover any extra costs or expense that arise because of your disability while studying, as well as recommending any non-medical helper and assistive technology support you might need at university. DSA is available to full-time and part-time undergraduate or postgraduate students. International students should contact us directly do discuss alternatives to the DSA. DSA doesn't depend on household income – what you can get depends on your own needs. You don't have to pay these back.

What are the main differences between school or college and university? Teaching and learning can feel different at university, and we are committed to supporting students through this transition. School or further education colleges have a structured timetable and learning is closely monitored, whereas higher education is based on the idea of independent learning.

Types of Learning: Lectures – delivered by an academic and held in lecture theatres or classrooms, the purpose of lectures is to give a framework to structure your learning around. Lecture theatres can be very large and overwhelming if a student is used to being taught in a classroom setting. Seminars and workshops – smaller sessions where a group gets together, led by an academic, providing an opportunity to debate and discuss learning. These are designed to be interactive. Independent research – students will be expected to conduct preparatory reading for most lectures and seminars. Preparing coursework – coursework can vary from essays to portfolios and include presentations and group projects. Course tutors will give advice about how to write university-level coursework in the course induction sessions and will be available for advice through your course. NTU has a great service offered through the library where mentors can help you to learn, research and write at degree level and beyond.

Types of Assessment at NTU: Group Work, Practical or Written Exams, Essays, Group or individual Presentations, Group or individual Projects, Portfolios

**Source:** Accommodation and Living arrangements

**Text:**

Usually students will live with their friendship groups. They may begin to look for accommodation by November/December in first year. One useful tool is Unipol which can be found at unipol.org.uk. This is a website that advertises rental properties and allows tenants to rate the landlords anonymously. A landlord who is a Golden owner is someone who has not had any upheld complaint made against them for at least 4 years and therefore is a good measure of how reasonable the landlord is. Students can also get housing advice from Nottingham Trent Students Union. We recommend that students always view accomodation before deciding to rent.

**Source:** Transport and parking information for NTU students travelling to our Clifton campus

**Metadata:** Travelling to Nottingham Trent University by car

**Text:**

Clifton is a village near the city of Nottingham. For complete road directions from anywhere in the UK, see our directions to NTU webpage. The Clifton Campus postcode is NG11 8NS. If you intend to travel to the Clifton Campus by car, and are not entitled to purchase a parking permit, we recommended that you use the city’s Park & Ride services. You can park at the NET Tram Park & Ride - Clifton South site and catch the tram, getting off at the Rivergreen tram stop. Our Clifton Campus is a ten-minute walk from Rivergreen. Remember to buy your ticket before you board the tram. Visit the Nottingham Express Transit (NET) website for more information on the city’s Park & Ride services. You can use the discounted Student Mango Card on most Trent Barton buses, as well as the tram.

**Metadata:** Car Parking at Nottingham Trent University Clifton Campus

**Text:**

Please note that parking on Clifton Campus is extremely limited and restrictions are in place. Students living outside NG14 can apply for a permit, together with those with extenuating circumstances. There are a limited number of permits which are sold on a first come first served basis from the NTU Online Shop from the first week in September.

At the following times, parking is for students with a valid parking permit only: between 7 am and 4 pm on Monday, Tuesday, Thursday and Friday, between 7 am and 12 pm on Wednesday.

Permit holders can gain entry via the Main Entrance using their student card.

At all other times, students without a valid parking permit can park in the student car park. They can gain entry via the Main Entrance using their student card. Students must park in the student car park only. Our parking permit scheme ensures the students with the greatest need are able to park on campus. These include: students who travel in from further than NG14, students who live in the greater Nottingham area, but who have a real need to bring their vehicle to campus, and students with extenuating circumstances.

Blue badge holders: There are accessible parking spaces available to blue badge holders on the Clifton Campus. All our accessible parking spaces can be found on our Clifton Campus map. Please contact the car parking team to request accessible parking access for all campuses to be added to your student card.

Electric vehicle (EV) charging: There are currently 10 EV charging bays at Clifton Campus where you can charge your electric vehicle. One of these is a dedicated accessible parking space for a blue-badge holder. All spaces are located in the Main Gate car park.

To use the EV chargers. you need to first download the Mer Connect UK app from Google Play or the App Store and either register with Mer or charge your vehicle as a guest user. Follow the steps on the app and the charging station to begin. We recommend familiarising yourself with the instructions on Mer's website. For any issues, please contact Mer directly. If you use the EV chargers, they cost cost 47p per kW including VAT to use (subject to change). Users will still be required to pay their parking fee in addition to the charging fee – the two are separate.

**Metadata:** Car sharing at Nottingham Trent University

**Text:**

NTU operates a car-sharing scheme especially for students. It's designed to help you reduce your daily travel costs and CO2 emissions at the same time. It's totally free to use. It enables you to find others going your way, so you can share the journey. You can: take turns driving, offer someone a lift in exchange for a contribution to the fuel costs, look for someone to give you a lift. You can access your account online once you've registered. It makes searching as convenient as possible. You can choose to search for matches: among NTU students, or from the whole nationwide Liftshare database. You don't have to do it every day. It's completely flexible. Once you've found others going your way, you decide among yourselves how often it suits you to share.

**Metadata:** Travelling to Nottingham Trent University by Tram

**Text:**

The Clifton Campus is also easily accessible by tram, the nearest stop to the Clifton Campus is Rivergreen on the Clifton South line. The Campus is a 10 minute walk from the Rivergreen stop. Find more information on discounted travel options for students on the Nottingham Express Transit (NET) website. You must buy your tickets before you travel. Regular checks do take place. Anyone caught without a valid ticket or smartcard will be liable for a £50 fine. You can use the new NETGO app to make purchasing tram tickets quicker, easier and cheaper.

**Metadata:** Travelling to Nottingham Trent University by bicycle

**Text:**

The Ucycle student bike hire scheme is a great way for students to get around the University Campus. We have over 200 bikes available to hire for £49 a year, secure compounds for cycle parking at each campus, and support from the City Campus based workshop, where expert mechanics and advice is available. Visit the Ucycle web pages for more information. You'll also find: Nottingham cycle maps, details of NTU shower, and cycle compound facilities information about our Doctor Bike sessions.

**Metadata:** Travelling to Nottingham Trent University by bus

**Text:**

The Service 1 and Service 4 buses go from the city centre to Clifton Campus. The Service 1 leaves from Beastmarket Hill in the City Centre and drops off and picks up passengers at the bus stops just outside Clifton Campus Main Entrance. Service 4 leaves from Burton Street, near Turtle Bay restaurant and drops off passengers inside the campus gates. Visit the Nottingham City Transport website for more details and updates about NCT services. A discounted pass is available to all NTU students as part of your Smartcard. You can find timetables on the Nottingham City Transport website.

**Metadata:** Information about NTU’s supercomputer called Hydra AI

**Text:**

Accelerate your research with NTU's new supercomputing Hydra AI service - the Computer Science department in our School of Science and Technology has launched an exciting new computing service designed to help researchers accelerate their projects and delve deeper into their work. Built and tested over a span of five months, a 320-node supercomputer – Hydra AI – provides research colleagues with a cost-effective way of gaining access to a large amount of computing processing power. Unlike conventional systems which use central processing units (CPU) or graphics processing units (GPU), it uses Field Programmable Gate Array (FPGA) technology. This is a groundbreaking approach also employed by tech giants like Amazon and Microsoft. Hydra AI is currently being used by our computer science researchers on projects related to quantum computing, medical imaging and artificial intelligence; and it’s now ready to tackle the diverse range of research challenges across NTU. The plan for the future is to extend access to regional organisations and eventually to national companies. The service is flexible and you’ll be able to rent the system for the length of time needed for your project. If you require large amounts of processing power to do calculations such as mathematical processing, optimisation, machine learning, data analysis or computational modelling, these would work well on the Hydra AI platform.

If you have any other questions, please speak contact us at hydra@ntu.ac.uk.