Computer Science
Open Day

School of Digital and Physical Sciences

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Computer Science
Open Day – Morning session

- Please join us on Menti
- https://www.menti.com/alfwo4bu7h5c
- or
- www.menti.com
- with access code: **8940 7267**

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Today's talk

- Computer Science at Hull
- Programme details
- Distinguishing features of our programmes
- Where can your degree take you?
- What do you need to join us?
- Tour

- *No alarms are expected. If an alarm sounds, follow the guidance of staff and/or head to the nearest fire exit (signed)*
- *Toilets – along the corridor and on each floor*

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Our degrees

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Degrees (BSc/MEng)

Computer Science	• Build a strong foundation across software design, programming, cyber-security, hardware, and applications—with the flexibility to create your own customized learning pathway.
Artificial Intelligence	• Focus on human-centered AI: learn how to understand, implement, improve, and ethically collaborate with intelligent systems across industries.
Robotics and Artificial Intelligence	• Apply computer science and AI theory to real-world robotic systems. Gain hands-on experience at the intersection of robotics, machine learning, and intelligent systems.
Games Programming	• Turn your passion for gaming into a career. Learn the computer science behind game engines, physics, AI, and graphics—preparing for roles in the gaming industry.
Software Engineering	• Master the full software development lifecycle—from concept and architecture to coding, testing, cyber-security, and long-term maintenance—with a strong theoretical and practical foundation.
Cyber Security	• Advancing knowledge and practice in digital security and cyber defence. With a focus on resilient and secure software systems.

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Postgraduate opportunities

Specialist taught masters

- **MSc in Advanced Computer Science**
  Requiring a Computer Science oriented degree
- **MSc in Computer Science for Games Programming**
  Requiring a Computer Science oriented degree

General taught masters

- **MSc in Artificial Intelligence** (online and part-time)
  Requiring a degree and some programming experience
- **MSc Artificial Intelligence and Data Science** (taught in DAIM)
  Requiring a degree

Postgraduate Research

- **MSc by Research**
- **PhD by Research**

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Unique Selling Points
Computer Science @ Hull

- **Industry-Aligned, Career-Ready Curriculum**
  - Designed to bridge the gap between graduation and employment, ensuring high employability.
  - Graduates are equipped to deliver real-world results from day one.
  - Strong industrial partnerships actively shape our curriculum and provide real-world relevance.
- **AI-Tools Embedded Across All Programmes**
  - Fully integrated AI tools to embrace and harness emerging technologies.
  - Innovative, authentic assessment methods that test genuine understanding, not just memorization.
  - Empowering students with AI, frees up time for deeper engagement with the more challenging and rewarding curriculum components.
- **Flexible Curriculum Structure**
  - A common first year enables students to make an informed decision about their specialisation.
  - Optional industrial placement or study abroad year between year 2 and "3" (which becomes year 4) - flexible choice up to end of year 2.
  - BSc and MEng degree share the first three years, offering smooth transitions between pathways—even up to final-results day.
- **MEng with Built-In Commercial Experience**
  - Commercial experience embedded directly into the programme structure.
  - A powerful alternative to the traditional year in industry, offering equivalent benefits within a more streamlined academic path.
- **Research-Informed Teaching Excellence**
  - Teaching is driven by world-leading research, particularly in AI and dependable systems.
  - Students learn from experts actively shaping the future of computing.

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Programme details

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Artificial Intelligence
Empowering Human Potential

- **Driven by Four Core Pillars**
  - Understand – Master the theoretical foundations of AI
  - Implement – Build and deploy practical AI systems
  - Improve – Optimise, adapt, and evolve AI solutions
  - Collaborate – Enable powerful synergy between humans and intelligent systems
- **What You'll Learn**
  - Practical introduction to Language Models
  - Generative and Collaborative AI
  - Machine Learning & Deep Learning with a focus on: Robustness, Adaptation, Ethical deployment
- **Advanced Research-Informed Topics**
  - Edge AI – Real-time intelligence on low-power devices
  - Secure AI – Resilience against adversarial attacks
  - Responsible AI – Ethics, fairness, and explainability
  - Collaborative AI – Intelligent interrogation, shared judgement, and reciprocal apprenticing
  - MLSecOps – Blending Machine Learning, Security, and DevOps for secure, scalable, production-ready AI
- **Taught by World Experts**
  - Learn from academics with international reputations in Artificial Intelligence
  - Our teaching is informed by real-world applications and globally recognised research

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Games Programming
Launch your career in video-game development

- **Cutting-Edge Curriculum**
  - Master the core computer science behind game engines, physics simulations, artificial intelligence, and graphics.
  - Designed to equip you with the technical depth needed for success in the fast-moving games industry.
- **Proven Heritage**
  - Over **30 years** supplying top-tier graduate programmers to the global gaming industry.
  - Contributions to **750+ published** game titles.
  - Technologies and code within our alumni power games have shipped over **1 billion** copies worldwide.
- **World-Class Learning Environment**
  - Taught by lecturers who are active experts in key areas of game development.
  - Join a thriving alumni network—graduates hold senior and founding roles at major game studios.
  - Regular participation at the Game Developers Conference (GDC) maintains our cutting-edge and industry-aligned teaching.
- **State-of-the-Art Labs & Tools**
  - Access high-performance graphics labs, VR/AR studios, and industry-standard development tools.
- **Supportive Community**
  - Strong student community with access to game jams, hackathons, industry-led seminars, and student-run societies.
- **Exceptional Employability**
  - Deep-rooted industry connections ensure our graduates are always in demand.
  - Many employers actively recruit directly from our courses—some before graduation.

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Software Engineering
High Employability and Real-World Impact

- **End-to-End Software Engineering Expertise**
  - Learn the complete software engineering lifecycle: from idea, requirements, and design, through to implementation, testing, deployment, and maintenance.
  - Our graduates are equipped to contribute at every stage of the development pipeline—as designers, developers, QA specialists, project managers, delivery engineers, support teams, and maintainers.
- **Industry-Relevant Tools, workflows & Methodologies**
  - CI/CD pipelines, Git, Azure DevOps
  - Agile and PRINCE2 methodologies
  - Generative AI tools such as GitHub Copilot
- **Real-World Application Development**
  - Build robust software for standalone, distributed, and cloud-based systems.
  - Focus on solving real-world problems through practical, industry-aligned projects.
    - Professional Development (year 1) and Design Develop Deploy (year 2)
    - Honours Stage Project (year 3)
    - Embedded Commercial Development Practice in Year 4 of MEng programmes
- **Taught by Leading Experts**
  - Learn from staff with deep industry experience and international reputations in software engineering research.
  - Instruction grounded in real-world applications across critical systems for safety, healthcare, automotive, and emergency services.
- **Global Impact & Cutting-Edge Research**
  - Our tools and techniques are used by major global companies, including:
    - Honda, Toyota, Huawei, NYK, Honeywell, Volvo, Continental, Fiat, Embraer, Siemens
  - Our research contributes to international standards and automated safety analysis and design of complex systems.

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Robotics and AI
Where Engineering Meets Intelligence

- **Multidisciplinary Teaching Excellence**
  - Delivered by a collaborative team of engineers and computer scientists, offering a rich, interdisciplinary learning experience.
- **Integrated Curriculum of 3 core strands**
  - Programming – foundations of software for intelligent systems
  - Hardware – electronics, mechatronics, embedded systems
  - Artificial Intelligence – theory and application in robotics
- **Key Topics Covered**
  - Core computer science
  - Electronics, microcontrollers and embedded systems
  - Robot hardware, sensors and operating systems
  - Vision, navigation and planning
  - Building AI into robots (embodiment)
- **Embodied Intelligence**
  - Once the fundamentals are in place, the focus shifts to the integration of AI within robotic systems.
  - Learn to understand, implement, and enhance intelligent behaviours within robotic control systems.
- **Research-Informed, Industry-Aligned**
  - Taught by academics with internationally recognised research—including world-leading work on robotic limb control.
  - Exposure to cutting-edge tools and techniques shaping the future of robotics and AI.
- **Hands-On Experience**
  - Access to dedicated robotics labs and fabrication facilities for practical, project-based learning.
  - Be part of a thriving Robotics Society, offering competitions, workshops, and peer collaboration.

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Computer Science
Choose Your Own Adventure

- **A course built around you**
- Our Computer Science programme offers unmatched flexibility—allowing you to shape your degree around your interests and career goals.
- **Choose from a wide range of topics**, including:
  - Software Design
  - 3D Graphics
  - Advanced Programming Concepts
  - Generative & Collaborative AI
  - Artificial Intelligence & Robotics
  - Cryptography, Networks, Cybersecurity
  - Data Analysis, Simulation, Databases, Extended Reality
  - User Interfaces, Safety-Critical Systems,
  - … and much more!

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The first year – level 4

NSS results
95.4% “staff are good at explaining things”

Trimester 1	Trimester 2
Programming Portfolio	
Algorithms and Data Structures	Architectures, Operating Systems and the Cloud
Professional Development	Computational Thinking

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Distinguishing features of our programmes

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Flexibility across programmes

Common first year

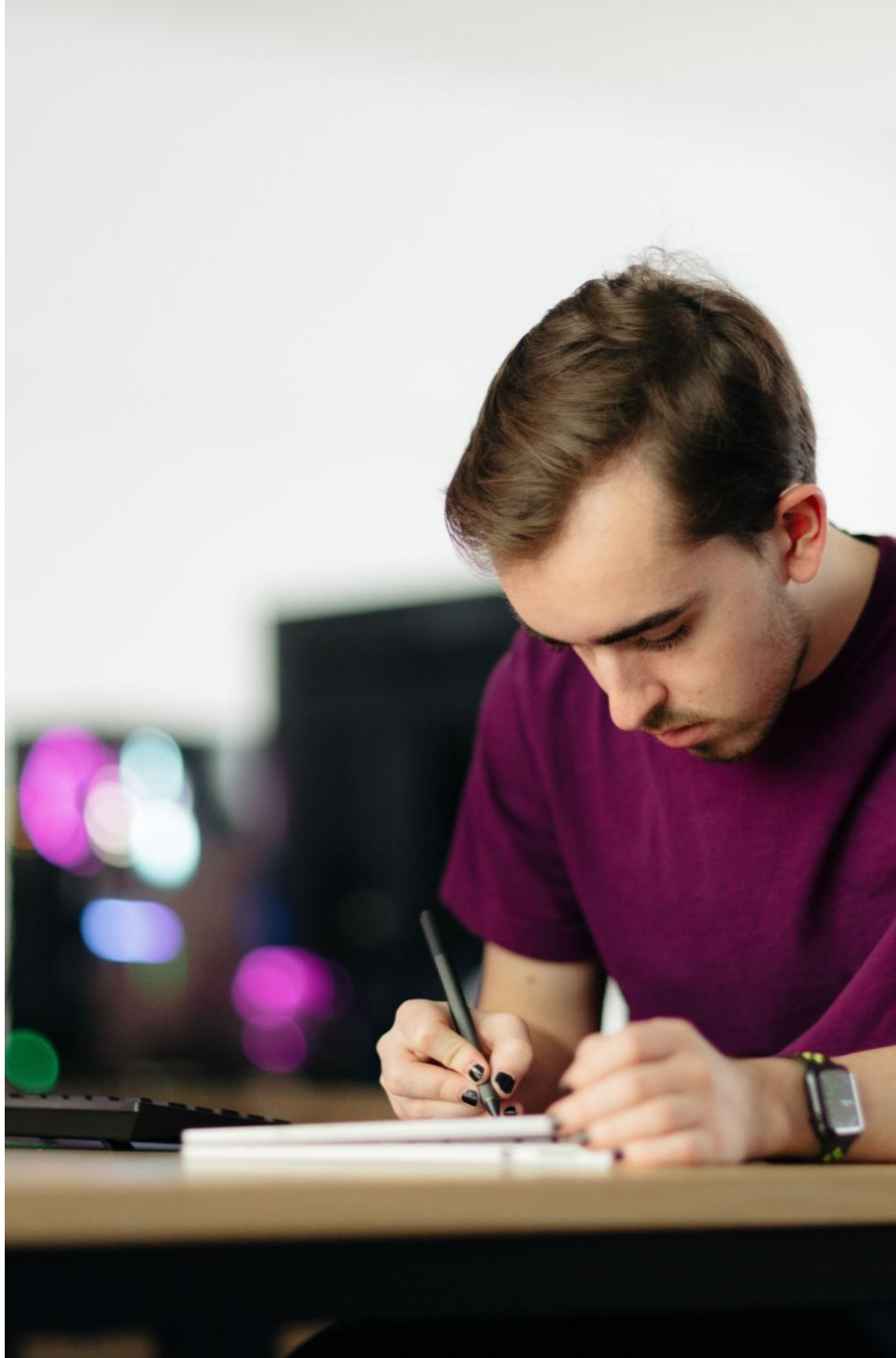
- All themes share the same 1st year modules
- You can switch degrees at any time during year 1

All themes offer two awards

- BSc 3-year
- MEng 4-year

All themes have the option, between 2nd and 3rd year, of

- Industry Placement, or
- Study Abroad



Industrial Placements and internships

- Apply your learning
- Develop your CV
- Gain real world experience
- Get paid whilst earning 120 credits
- Structured support in year 2 to help secure placements

- Examples of recent placements

Baker Hughes

LUXINAR
INGENUITY AMPLIFIED

JLR

AIRBUS

IBM

CATAPULT
Cell and Gene Therapy

kainos®

SABRE
TECHNOLOGY

eon
visual media

lampada
DIGITAL SOLUTIONS

BAE SYSTEMS

SIEMENS Gamesa
RENEWABLE ENERGY

next

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Study aboard

Visit the **Placement and Study Abroad Team** at their stand

- Boost your **CV** and develop your skills
- **Scholarship** funding available to support travel and living costs up to £6,000
- **Tailored programmes** from 2 weeks to 12 months to suit all students, courses, and budgets
- **Dedicated support**, guidance and expertise from the Placement and Study Abroad Team
- Create lifelong memories and travel the world

CAMP AMERICA

CSU The California State University

Play Action

QUT BRISBANE AUSTRALIA

TURING SCHEME

The UK's global programme to study and work abroad

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Pre-Certificate (Foundation Year)

- A route that includes a year to support applicants that don’t meet our typical intake threshold
- Includes some more general study skills development alongside subject specific preparation

Languages and tools used within our programmes

The following illustrate some of the many languages and tools you will learn and use

- **C#** – object-oriented language, including the .NET framework
- **Python** – multi-purpose language used for AI and simulation
- **GitHub** – version control and management tool
- **CoPilot** – generative AI tool to support coding
- Specialisms introduce other languages as required, e.g.
  - C++ for Games
  - Ros/Gazebo on Linux for robotics
  - OpenGL / Vulkan / HLSL / GLSL for graphics
  - CUDA / Rust for parallel

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State-of-the-Art Computer Science Facilities

- Dedicated Teaching Labs
  - Purpose-built labs equipped with high-performance PCs, refreshed regularly through an aggressive upgrade cycle to ensure you always work with the latest hardware.
- Specialist Robotics & Hardware Labs
  - Hands-on learning in dedicated robotics labs, complete with fabrication facilities for prototyping and engineering real-world robotic systems.
- Immersive Technologies Lab
  - VR and AR headsets
  - Lab-scale positional tracking systems
  - Interactive 3D and mixed-reality environments
- Advanced Platforms & Tools
  - Mobile devices & tablets
  - Embedded systems
  - GPU clusters for high-performance computing
  - Virtual machines and cloud computing services
- Professional Software Access
  - Free access to industry-standard development tools, platforms, and frameworks—from version control and IDEs to simulation engines and cloud toolkits.

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Student support

- Academic
  - Every student is assigned an academic supervisor for the duration of your studies
- Hubble Portal
  - Our specialist teams offer advice and guidance in a confidential, supporting environment.
    - Learning Support
    - Disabilities Inclusion
    - Mental Health Support
    - Financial Support
    - Immigration Advisers
    - Student Futures (Careers service)
    - Assisted Technology
- Student Assistance Programme
  - SAP is a 24-hour helpline delivered in partnership with Health Assured which is available to help you with anything that's impacting on your mental health and wellbeing.
- Students Union Advice Centre
  - provide free and impartial advice and guidance on any issues you may face as a student, from finance and funding to employment and housing

https://www.hull.ac.uk/choose-hull/student-life/student-support for a complete list of support services

Where can your degree take you?

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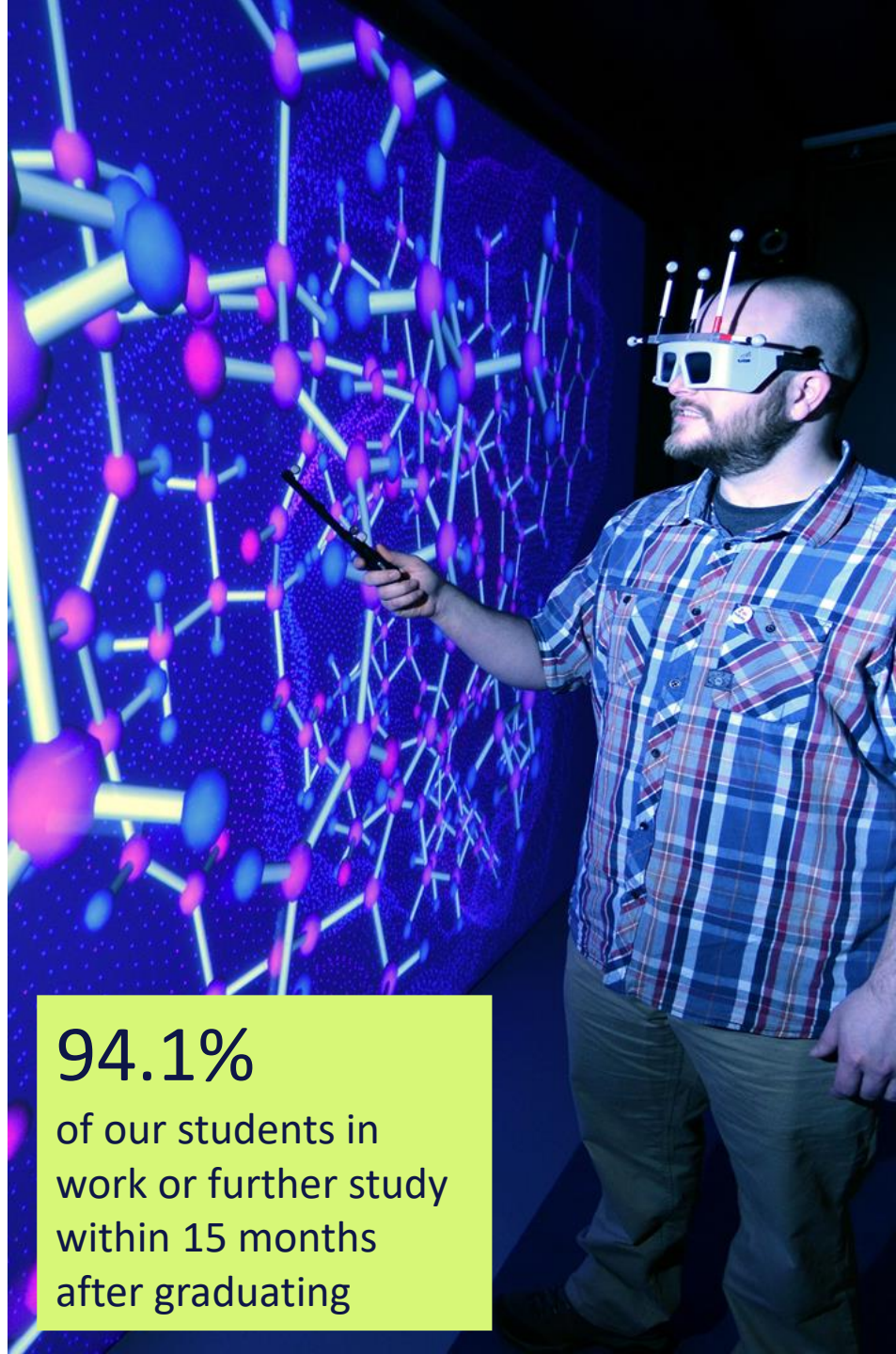
Preparing for the future

- *Rather Useful Seminars*: weekly visiting speakers from industry etc. for all students
- Specialist industry content in modules, sponsored hackathons and other activities
- Industry preparation, for placements, internships, and careers
- Free student membership of British Computer Society
- Programmes BCS accredited [CS, SE, Games] or applying for professional accreditation [AI, R&AI]



Our impact

You probably use technology every day that one of our graduates helped create.

This is just a small selection where our alumni have worked.

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What do you need to join us?

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What you'll need

- Enthusiasm for computers and computation
  - You do not need much experience, but you do need to be ready to learn
  - Correlation between enthusiasm and success!
- Any higher qualifications
  - A levels, T levels, BTech, etc. are all welcome
  - Offers typically start at
    - 80 UCAS points (for foundation year entry)*
    - 112 UCAS points (for BSc)*
    - 120 UCAS points (for MEng)*
  - We also accept other qualifications or alternative experience
- Maths is useful but we only require GCSE level.
- We welcome Computer Science and related backgrounds, but its not essential.

* Check website for the definitive requirements, and for international qualifications

Tour of facilities

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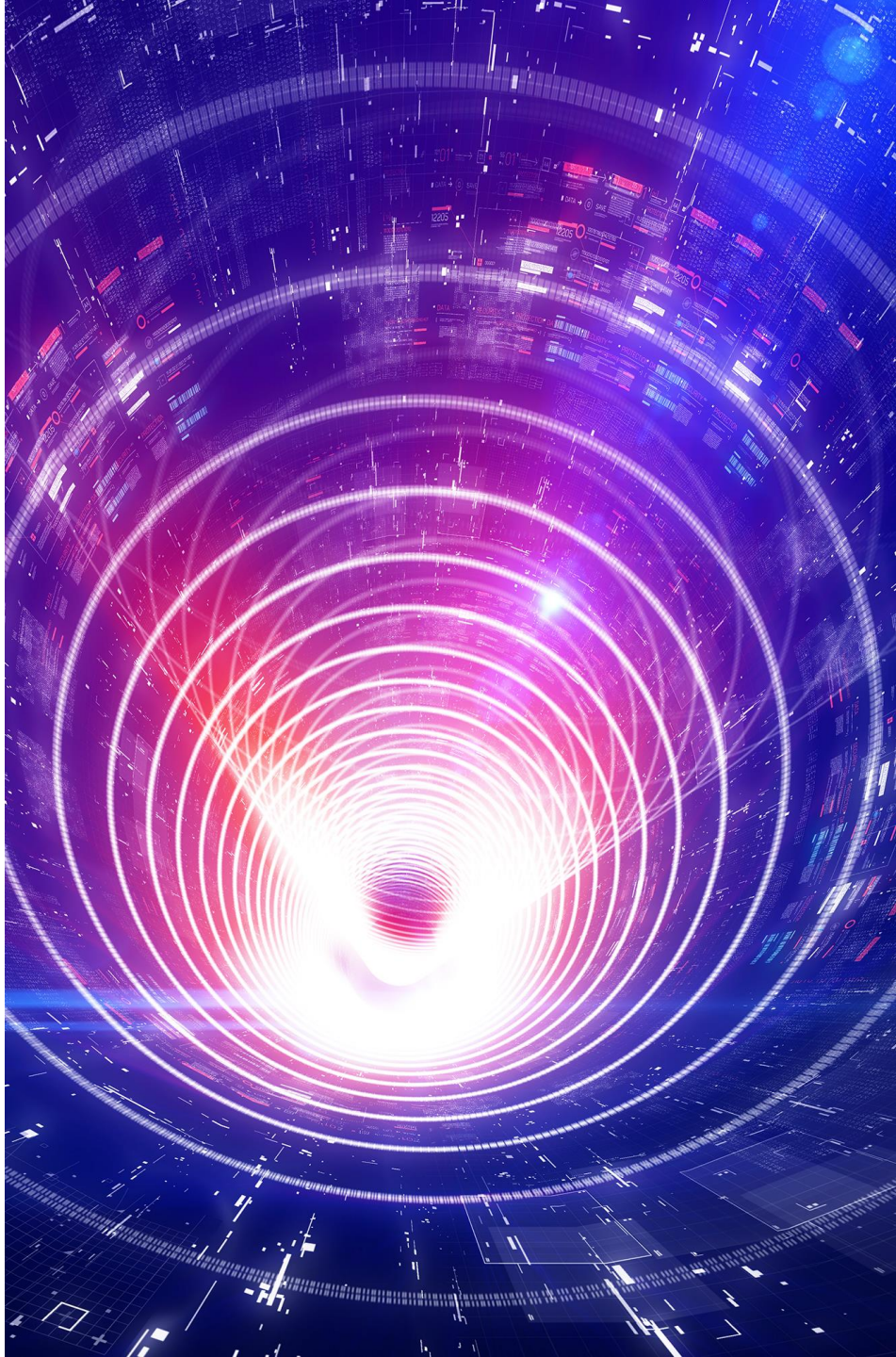
The rest of the session

- Tour of some key facilities
  - We will help reach the locations
  - You can also access a virtual tour from the website
- Do ask questions – the staff and students are happy to help
- And if you apply through UCAS in the future, you will be invited to an applicant day in the spring.



Thank you

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