

ESSENTIAL GUIDE TO

CAREERS IN COMPUTER SCIENCE



QUIZ

HOW WOULD YOUR FRIENDS DESCRIBE YOU?

A	A CREATIVE THINKER
B	A PROBLEM SOLVER
C	A STORYTELLER
D	A CREATOR

IF YOU WERE CREATING A NEW PRODUCT, WOULD YOU

A	DESIGN THE PRODUCT?
B	RESEARCH THE MARKET?
C	PROJECT MANAGE TO MAKE SURE IT IS DELIVERED <u>ON</u> TIME?
D	CREATE THE TECHNOLOGY REQUIRED?

WHAT ARE YOU LIKE AT FIXING OR BUILDING THINGS?

A	I LIKE <u>TO</u> DESIGN THEM, NOT BUILD THEM
B	I'D RATHER BUILD SOMETHING THAN DESIGN IT
C	I LIKE <u>TO</u> FIND THE ERRORS AND FIX THEM
D	I LIKE <u>TO</u> DESIGN AND BUILD

IF YOU CHOSE MOSTLY

A	B	C	D
<p>you might enjoy roles such as being a WEB DESIGNER or user experience (UX) designer. Your creativity makes you a great fit to help build websites and interfaces that suit your client.</p>	<p>consider a career as a DATA ANALYST being a problem solver and great communicator will allow you to gather and analyse valuable data and provide insights into trends or patterns.</p>	<p>think about the role of a forensic COMPUTER ANALYST and use your skills to critically analyse and present data you find during your investigation.</p>	<p>you may like to work as an ARTIFICIAL INTELLIGENCE (AI) engineer, being responsible for the development and maintenance of AI to address specific challenges.</p>

WHAT DOES YOUR IDEAL JOB LOOK LIKE?

A	GETTING CREATIVE AND COMING UP WITH NEW IDEAS
B	BIG-PICTURE THINKING AND SOLVING PROBLEMS
C	UNDERSTANDING HOW THE COMPANY OPERATES, AND FINDING WAYS TO DO IT BETTER
D	FINDING WAYS TO USE TECHNOLOGY TO ENHANCE DAY-TO-DAY LIFE

HOW DO YOU WORK BEST?

A	WHEN I AM THINKING CREATIVELY
B	FOCUSING UNTIL MY WORK IS PERFECT
C	COLLABORATING WITH OTHERS TO FIND A SOLUTION
D	I PERFORM BEST UNDER PRESSURE

A CAREER AS A

COMPUTER SCIENTIST

Do you want to inform change within the healthcare system through computer-led research? Develop a game engine? Train artificial intelligence? In an expanding field such as computer science the scope of employment opportunities for graduates can be overwhelming. Below, we highlight some of the careers you could pursue with a degree in computer science and discuss how you can discover the path that best suits you.



SOFTWARE ENGINEER

Are you a keen and motivated problem solver? Software engineers are responsible for designing and developing computer programs, websites and apps. You'll use your skills to address complex problems through science and mathematics, design, test, improve hardware and software, and write and test codes.



CYBER SECURITY ANALYST

The digital space is full of threats. Cyber security analysts keep us and our personal information safe from hackers and criminals by using technology to test, detect and prevent cyber-attacks. This is the job for you if you want to build and maintain systems to protect information.



GAME DEVELOPER

Gaming is a multibillion-dollar industry which continues to grow. Games developers will work on the development and production of games for consoles, PCs, smartphones, and tablets. To work in this area, you'll need creative flair and programming skills in programs such as C++.



UX DESIGNER

Have you ever wondered why some websites are more user-friendly than others? User experience (UX) designers examine and work to improve the experience users have on a website or app. You'll need to think imaginatively to improve and continually develop strategies to keep users coming back for more.



WEB AND APP DEVELOPER

Web developers are responsible for designing and creating websites. You'll need to know a variety of programming languages, such as JavaScript or PHP, and you'll use these to write and optimise code. If you want to help improve an organisation's web presence, this role could be for you.

We use apps for everything from personal wellbeing and fitness to journaling and photo editing, but we rarely think about the team behind them. App developers design, create and maintain the applications we rely on and enjoy every day.



AI ENGINEER

Artificial intelligence (AI) is becoming a part of everyday life. AI engineers are the humans behind the machines, creating the algorithms and learning systems that guide robots. Being an AI engineer is the perfect role for those who want to help shape our mechanical peers.



FORENSIC COMPUTER ANALYST

As technology develops and grows, so does the threat of cybercrime. Forensic computer analysts use their skills to investigate and prevent these illegal activities. You could work within the police service, a computer forensics organisation or industries such as business and finance.

CHOOSING WHAT IS RIGHT FOR YOU

A computer science degree will leave you with a wealth of skills which will prepare you for a variety of career paths.

When it comes to choosing what it is you want to do, it can also help to think about what interests you. You will find roles and industries can intersect. You could work as an AI engineer for a construction company or law firm. The gaming industry will need UX designers and security analysts. Media companies need app designers and IT managers. **Remember, wherever your interests lie, you'll find a connection to computer science. The possibilities are endless.**

**FIND OUT MORE
ABOUT THESE CAREERS AT
prospects.ac.uk**

WHAT TO KNOW BEFORE STUDYING COMPUTER SCIENCE

A BACKGROUND IN COMPUTER SCIENCE ISN'T NECESSARY

It can be daunting to start studying a subject you don't have much experience with. However, you're not alone. If you have the passion and desire to learn new skills, and a keen interest in problem solving, then you'll fit right in, whatever your educational background looks like.

Our computer science courses are designed to cover everything you need to know.

You'll start with the core concepts and methods of the subject, before specialising in the areas which interest you most as the course progresses.

THERE'S MORE TO COMPUTER SCIENCE THAN CODING

If you want to pursue a career in coding then a computer science degree would, of course, be beneficial. That said, **it's a common misconception that the subject is all about coding and little else. Computer science is everywhere. It's an ever-expanding area of work and as a result the employment opportunities are also growing.**

PROBLEM-SOLVING IS IMPORTANT

Problem-solving is one of the most important aspects of computer science. If you can identify a problem, and then develop creative solutions as to how technology can make it better, then you'll thrive in computer science. Also, don't be afraid of getting it wrong. There might be some trial and error, but this is all part of your learning and development. These things take time, and your studies provide the perfect opportunity to experiment and grow. **If you're interested in technology and have exciting ideas on how it can change our world, a computer science degree could be for you. Which brings us to our next point.**

COMPUTER SCIENCE CAN BE REWARDING

With computer science being used more frequently across increasingly diverse sectors, you will likely find the work engaging and satisfying. Even more so if the sector is one you're interested in. Perhaps you've dreamed of creating and developing your own software system or platform. You could work with a small tech start-up or a huge business like TikTok. **Alternatively, you may wish to develop software to tackle climate change or a system to increase worker safety on oil rigs. From architecture and law to the environment and transport, computer science is playing a vital role in many industries.**

CAREER STATS



2 MILLION VACANCIES

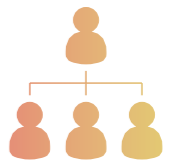
FOR TECH ROLES
BETWEEN **MAY**
2021 AND 2022

Source - Stagetechn

NEARLY
5 MILLION PEOPLE
WERE WORKING IN THE
DIGITAL TECH
ECONOMY

IN 2022

Source - Stagetechn

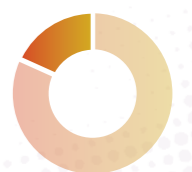


AFTER A RECORD
YEAR IN 2021,
THE UK WAS **FOURTH**
IN THE WORLD FOR
TECH INVESTMENT
AT **\$40.8BN**

Source - Stagetechn

IN 2022, **26%**
OF THE **TECH**
WORKFORCE
WERE WOMEN

Source - UK Tech news



74% MEN
26% WOMEN

TRANSFERABLE SKILLS

Computer science is an expansive field, and there are fundamental skills you'll develop while studying which can be beneficial to many roles and workplaces. If you're considering a computer science degree, then you'll want to know more about the transferable skills you'll gain and foster over the duration of your course.

PROGRAMMING LANGUAGES

Computer science involves building and testing programs, so think of programming languages as your bricks and mortar. **Over the duration of your course, you'll learn and use several programming languages, and the more languages you know, the greater your CV will look to potential employers.**

DATA ANALYSIS

Another key aspect of many computer science roles is the ability to effectively analyse and interpret complex data. During your studies, you'll develop the ability to not only understand how systems and programs work but analyse why they behave in certain ways. **You'll learn to identify patterns and trends and use the data to develop new strategies and inform any future development.**

TECHNICAL WRITING

Technical writing is the ability to convey complicated ideas and instructions clearly. Whether it's removing barriers created by jargon or writing a manual for the program you've written, the ability to simplify complex information will help you stand out from the crowd.

PROBLEM SOLVING

Using computers to solve problems is a cornerstone of computer science. **You can use the analytical approach developed during your studies to show potential employers your ability to adapt, calmly identify issues and create informed strategies to address them.**

MATHEMATICS

You'll find numbers buried in code and hidden among the algorithms you encounter throughout your studies, and so it stands to reason that you'll develop your maths skills. Your ability to create difficult formulas and interpret intricate statistics will show potential employers your keen eye for problem solving and detail.

COMMUNICATION

We've already discussed how computer science can involve communicating complicated ideas. However, this skill extends far beyond the world of IT and will be a desirable trait in most fields of work. **If you can communicate effectively, your working relationships will be all the better for it.**

TEAMWORK

When it comes to using machines to solve some of the most complicated problems facing our world today, you'll usually find a team of people behind it. So, whether you're creating a program or building a website, there'll be plenty of opportunity for group work throughout your degree. Let potential employers know about your teamwork skills and show them what you can bring to their organisation.

CREATIVITY

With computer science requiring so much problem solving, it's only natural your creative abilities will develop throughout your time at university. **Many employers look for candidates who can spot problems in the workplace and come up with inspired solutions to address it.** Let your potential future boss know exactly what you can bring to the table.



PREPARING FOR YOUR FUTURE

Deciding the next step in your career journey is a big decision. It is important that you research and understand your options.

HOW TO APPLY FOR UNIVERSITY?

If you are interested in applying to university, look at the types of courses you would like to study and the entry requirements.

Once you have decided on your subject of choice, you should visit each institution, attend events and open days as well as take the opportunity to speak to the lecturers, staff and current students. You can choose up to five courses in your UCAS application and the main deadline is in January. Once you have visited your choices, you can apply to your favourites on the UCAS website, which will inform you of the information you need to provide and ask for a personal statement.

NOTE

Reforms to the Personal Statement process are coming for 2025, check UCAS for the latest information.

WORK EXPERIENCE

Work experience is a great way to find out if a career is right for you. You may have a school or college careers leader who you can ask to help with finding experience.

Work experience may include:

- A **placement** that lasts a week or two
- **Studying a free online course** such as Software Development or Coding and Design with Future Learn - <https://www.futurelearn.com/courses>
- **Develop your skills** with online initiatives such as Google's Tech Dev Guide or Hack the Box

Researching the companies or industries you are interested in will allow you to narrow down the areas you would like to gain experience in. This may include attending an insight event organised by an organisation that can give you information about their company and sector.

Companies may also offer virtual placements, where you can work remotely and develop new skills. The National Careers Service (nationalcareers.service.gov.uk/) has great resources for online work experience, virtual internships and insight into work opportunities.

INTERVIEW PREPARATION CHECKLIST

Whether you are applying for a degree, apprenticeship, work experience or a job, our interview preparation checklist will ensure you are prepared to present yourself in the best way possible.

- Personal documents. **Take a copy of your application, your qualifications and identification with you.**
- **Prepare any material for the interview**, whether it's a presentation or a portfolio of your work.
- **Research the organisation and wider industry news.**
- **Revise fundamental theories** and attempt to fill knowledge gaps.
- **Understand your strengths and weaknesses.**
- Formulate answers for **both behavioural and personal questions.** Practice these with someone.

Interviews, like many things in life, are an opportunity to learn and grow. If you're unsuccessful, reflect on what you could improve, ask for feedback and get prepping for the next one.



KICK START YOUR CAREER

To find out more, join us at
one of our upcoming events:

[law.ac.uk/events](https://www.law.ac.uk/events)

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