

Tech: IT, data, AI and machine learning

Computing and IT jobs exist in all sectors and all types of organisations – in fact, over a third of all UK IT professionals work outside the sector.

Despite some high-profile stories of job cuts in big tech, the demand for people with IT and data skills is still robust. There are many opportunities open not only to those with proven IT skills but also to anyone with the right interests and potential.

Within the IT sector there is a huge range of jobs, roles and job titles - from software engineering, to website production; cloud computing and systems development to cyber security specialists. The rapid expansion of AI, data analyst and data

science roles is adding to demand. The sector also employs people across the full variety of non-technical roles – for example, sales and marketing, legal services, HR, and finance.

Outside the IT industry, technical roles exist across all industries because computing, IT and data underpin critical processes in nearly all organisations. Some sectors recruit particularly heavily into IT roles, notably in advertising and marketing, banking and financial services, games development, consultancy, manufacturing, science and pharma, retail and public sectors. In parallel, the



growth in tech start-ups is creating significant extra demand for technically skilled graduates and, at Oxford, hiring is increasing in rapidly expanding fields such as 'data analytics' and 'FinTech'.

The volume of employment opportunities for IT professionals remains high, and firms can struggle to fill positions. As a result, people with proven programming and analytical skills are highly sought after, and many companies actively recruit people without technical skills who have the potential to learn and develop quickly once in post. Companies provide excellent training and support for new graduates, from an initial intensive 'bootcamp' to on-the-job development. Starting salaries, even for those without technical skills, often exceed £30,000.

The IT consultancy industry is also growing fast. Some major players operate globally, offering strategic advice, systems development and implementation. New recruits can expect high quality training before being embedded with clients to work on projects. But tread carefully and understand the contract! Some firms offer 'free training' linked to a contracted 2-year period as a consultant, but if you leave earlier they can demand very large repayments (up to £20,000) for the training.

Getting in and entry points

Companies visit Oxford throughout the autumn to run events and attend our SET Fair, Careers in Computing, and Jobs for Mathematicians Fair. Deadlines tend to fall either side of

Christmas, running into late January/February. However, jobs continue to be advertised year-round to fill empty seats.

Whilst computer science graduates are in high demand, many opportunities are open to anyone who demonstrates potential and a keen interest in the field. Having technical experience is very useful, whether acquired through your degree, self-taught or from your extra-curricular experience, so consider how you can provide evidence of your interest and, if you struggle with this, find opportunities to get involved now to gain some experience.

Extra-curricular ideas

- Join societies and attend events: try CompSoc, Oxford Women in Computer Science (OxWoCS) and AI Society.
- Enter competitions or attend a hackathon, including the annual Oxford Hackathon.
- Oxford IT Learning Centre offers a range of [IT-related courses and resources](#).
- Try free, open source self-directed learning at www.codecademy.com and similar sites. Popular languages include C, C++, HTML, Java, NET, Python and SQL.
- Showcase your programming skills on open-source platforms such as GitHub or take part in competitions run by companies and via [Kaggle.com](https://www.kaggle.com).
- Volunteer for an IT-related project/responsibility with your JCR/society/club or local charity.

Next steps

www.careers.ox.ac.uk/technology-data-machine-learning-ai



Tech offers a greater variety of roles than I ever could've imagined. If you don't have a degree in a STEM field, you might have more skills relevant to a career in tech than you realise.

Jenny Milne, MChem Chemistry, New College, 2022; Synalogik

Alumni profile

Jenny Milne

What: At Synalogik, I help to develop fraud detection and investigation software. Working for a start-up helped me to realise my strengths. I discovered new roles I hadn't considered or even knew existed. At first, I worked as a Java developer in our System Reliability team fixing bugs. Now I work directly with our product manager in a cross-functional role, collaborating with our Sales, Compliance, and Engineering divisions to decide and define what we will develop next.

Advice:

- Technical interviews for software development roles often centre around "Data Structures and Algorithms". You can find beginner's courses online that will help you prepare for these, and you can practice interview-style questions using resources such as LeetCode.
- Rather than getting too attached to one programming language, focus on getting to grips with the fundamentals of Software Development.
- Putting yourself forward for roles outside your comfort zone can be scary, but I found interviewers were often impressed that I attempted problems using the relatively little programming experience I had at the time. The more interviews I did the better I got. Even if you don't fulfil 100% of the job requirements, apply anyway!
- Companies assess potential - the ability to learn new skills quickly is more important than knowing a programming language inside-out. Technology evolves rapidly, so being able to adapt and learn throughout your career is key.
- A challenging degree can help you build the confidence to 'have a go' - to try and solve problems without fearing a wrong or imperfect solution. When approaching a new skill or experience at work, I often ask myself "How hard can it be?". Yes, sometimes the answer is "very hard indeed", but I remind myself that you can learn hard things. In fact, you've spent an entire degree doing exactly that.



Position

Synalogik.

Background

MChem Chemistry, New College, 2022.

Alumni profile

Dr Jasper Hajonides

Shifting focus: During my DPhil, I became increasingly interested in pursuing a position in industry. I enjoyed my empirical neuroscientific research but was uncertain about continuing down this path. Industry seemed to offer much better job prospects and conditions than academia and to still allow me to do what I liked best: solving complex problems using large collections of data.

What: My work in data science at dunnhumby revolves around using data to generate actionable insights for clients in the retail sector. Creating computational tools makes it possible to optimise product assortments, adjust prices, forecast product sales, recommend products, and much more. As a research data scientist in my first year, I am predominantly involved with developing new scientific approaches to existing problems. At any given time, I work on a number of projects that have quick turn-over times (compared to spending 2 years on a single project during my DPhil), which keeps work exciting and stimulates learning on new computational methods, as well as allowing me to build my knowledge of the retail sector.

Why: I wanted to move into data science because it was a good extension of all the skills I had learnt during my DPhil and prior studies. The critical and creative way of thinking when it comes to data-related problems readily transfers from academia to industry positions. It is also great to see that my data science work can bring about noticeable changes in shops around me.

Tips: Data science is a broad and rapidly evolving field. Make yourself aware of a wide variety of different methods and when best to apply them.

More generally, I recommend reaching out to people that do the type of work you would be interested in doing after graduating. This can help flag critical skills for your future job and set the right learning goals.

**Position**

Research Data Scientist,
dunnhumby.

Background

DPhil Experimental Psychology,
New College, 2022.

In-person

CAREERS IN COMPUTING FAIR 2024

📅 Thursday, 31 October | 15:00 - 17:30

📍 Mathematical Institute, OX2 6GG

Explore internships, graduate opportunities and full time jobs with top employers in the IT and computing sector.

www.careers.ox.ac.uk/ccf



Explore opportunities on

CareerConnect

Browse full-time and part-time jobs, work experience, and internships on our vacancies database for Oxford students, researchers and alumni.

www.oxford.targetconnect.net

**The Oxford Guild Careers in Tech Arm**

The multi-award-winning Oxford Guild is the **largest society in Oxford, Europe and the world as of 2015 according to The Times, Forbes, Milkround and BBC**. Our unrivalled track record speaks for itself.

100% FREE TO JOIN, TENS OF THOUSANDS OF MEMBERS, 120+ EVENTS ANNUALLY, 60+ SPONSORS.

We worry about your career so you don't have to!
BIGGEST SPEAKERS, EVENTS, BALLS, SOCIALS, TRIPS & CONFERENCES.

We are widely recognised for being the **most established, dynamic, active and professional society on campus** for students looking to apply for internships/jobs and are renowned for our experience. We have demonstrated consistent success in providing effective recruitment and brand awareness opportunities and services for organisations we work with. **We help a huge range of companies from Amazon, Facebook and iwoca to startups, scaleups and more, to increase the quality, diversity and quantity of their applicants.** We also host regular workshops on technical skills, including ML and SQL.

We are the founders of the famous Europe2SiliconValley Trip and CollegiumGlobalNetwork which has 40+ universities involved.

With **world class speakers such as Sam Altman last year**, the CEO of OpenAI (including major CEOs to Nobel Prize Winners, world leaders, top actors, musicians), and initiatives including our startup accelerator, investment fund, consultancy, app and intranet platform, become part of something special at www.theoxfordguild.com!

www.theoxfordguild.com