



### Career and study information continued

Should I study Computer Science or Software Engineering?

These related disciplines both provide technical training in various aspects of computation but with different emphases. Computer Science provides a broad exploration into areas of fundamental research, as well as links between computation, the sciences and arts.

In contrast, Software Engineering focuses on practical and human aspects of software development and management of teams.

## What skills can graduates gain?

Through studying a degree in Computer Science, graduates develop various technical and transferable skills that can include:

- Practical application of technology and science
- Adaptation to technological changes
- Computational thinking
- Programming and design
- Understanding of the social impact of technology
- Deep technical knowledge in their specialist area (e.g. security, artificial intelligence, human-computer interaction)
- Problem analysis and solving
- Analytical and critical thinking
- Creativity and innovation.

### Applied learning

Opportunities to apply learning are available through practical lab work and programming projects that assist in developing a portfolio of work. Students can also enrol in a software development project course.

These experiences can deepen graduates' skillset, awareness of others, working knowledge and employability.

### What do employers look for?

Many employers look for generic skills such as communication, client/customer-focus, bicultural competence, cultural awareness, teamwork and initiative.

With technology, globalisation, and other drivers changing society, skills such as resilience, problem solving, and adaptability are important.

Skills that are likely to grow in importance include analytical and creative thinking, systems thinking and technological literacy.\*

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### How can these skills be developed?

- Some skills are gained through studying
- Extra-curricular activities can help, such as getting involved in clubs, mentoring, cultural groups, part-time work or volunteering
- Be open to professional and personal development opportunities, whether ittan ( )o Tw 9 0 0 9 332.3366 212.493 Tm()Tjo.934 0.19td personalBe open

## What jobs and activities might graduates do?

Graduates with this degree are employed in a range of jobs — see some examples below.

### Full-stack developer

- Focus on the business-side of (web-based) software solutions
- Build prototypes to demonstrate the feasibility or economic viability of new software
- Test and maintain existing software

### Web developer (or front-end developer)

- Design both pleasant and usable screens to capture or present information
- Work on accessibility problems (i.e. how to make software systems usable by visually impaired or elderly persons)

### Computational science research

- Develop advanced simulations and models for studying intricate real-world phenomena
- Apply computational methods to tackle complex challenges across scientific fields
- Collaborate with experts, advancing both computational techniques and scientific understanding

### Infrastructure and security engineer

- Look after the infrastructure aspects of IT systems
- Design, deploy and maintain the computing machines, network devices and security procedures
- Monitor in real time the state of a network

### Business intelligence and analyst

- Apply mathematical and analysis skills to make sense of lots of data
- Help businesses make informed decisions regarding infrastructure or marketing aspects of software systems

### Mobile developer

- Design engaging mobile applications
- Improve functionality, performance, and user experience through testing and optimisation
- Collaborate, release updates, and stay updated with trends

### Game developer

- Develop (successive versions of) a game from story boards
- Work on various aspects of game development such as the graphics or engine (environment)
- Apply cutting edge technologies and methods to develop, test and roll out games

### Examples of other job titles and careers include:

- Applications analyst / developer
- Systems analyst
- Cyber security analyst
- Forensic computer analyst
- Data analyst
- Machine learning engineer
- Software engineer
- UX designer
- IT Consultant.

## Further study options

Computer Science graduates are able to progress their studies from honours through to a PhD. Some graduates also progress to a postgraduate diploma (PGDip) or a postgraduate certificate (PGCert) before starting a PhD. Some graduates also progress to a postgraduate diploma (PGDip) or a postgraduate certificate (PGCert) before starting a PhD.

