

CAREERS WITH STEM™

INFORMATION SECURITY ANALYST

Discover fast-growing jobs and paths
into information security careers

SUPPORTED BY

QUT

Think STEM. Think QUT.

Studying STEM at QUT opens a world of opportunities to achieve your full potential and forge a rewarding career.

Discovering how to improve lives by solving a range of real-world problems will be crucial in the future. Many of the jobs of today were unheard of a decade ago: app developers, big data analysts, nanotechnologists and sustainability engineers.

We all know that careers in STEM provide the greatest opportunities to succeed in the future.

No university is better placed to help you launch your STEM career than Queensland's only university of technology.

Search QUT STEM to learn more about your study options, scholarship opportunities, and life as a QUT STEM scholar.

**the university
for the real world**



COULD YOU BE A DATA DETECTIVE?

Data drives our online world, and often our physical world too. But where is this data held, and who is accessing it? Have you got what it takes to protect it — and us — from spies and scammers?

DR LEONIE SIMPSON
SENIOR LECTURER

HAVING A DIVERSE GROUP OF PEOPLE LOOKING AT A PROBLEM IS USEFUL: WE NEED AS MANY DIFFERENT VIEWPOINTS AS WE CAN."

Information security is all about data — whether it's personal, business, financial or health data. Being an information security analyst means you'll be an expert on how information is used, and how it can be harmed or misused.

There are information security roles in every industry sector: health, finance, education, transport and much more (imagine if someone hacked into a driverless car!).

These aren't just technical roles — there are plenty of policy and governance roles also. Working in cyber security is a very flexible career. You could work for a charity, tech organisation, bank, insurer, the government, or for a university, like I do. Whatever you choose, your day-to-day life will always be changing, and you'll always be challenged!

Information security is not just one job, and it's not the stereotype of the 'hoodie-wearing hacker'. It's a broad field and there's room for many perspectives. In fact, having more diversity — different genders, cultures, backgrounds, abilities and personalities — is a massive asset to cyber security teams.

Information security is about problem-solving. We don't all think the same way, so having a diverse group of people looking at a problem is useful: we need as many different viewpoints as we can to

achieve the best possible outcome.

Information security is also hugely in-demand. There are not enough people in Australia with the skills to fill existing cyber security jobs and employers will be looking to hire 17,000 additional workers in cybersecurity by 2026.

Not having enough people employed in information security will have a real impact on people's lives. Just one week of disrupted digital activity would cost the Australian economy a mind-boggling \$7.5 billion.

Information security is a bit like health and safety — we need to practise basic cyber safety. An information security analyst understands what could happen if cyber criminals — or even another country's government — infiltrated data. And, if something like this did happen, what our response would be. Imagine if a school or a hospital couldn't access any of their data — it could be pretty devastating.

You could be at the frontline of defence, working in a highly paid, extremely in-demand job. Interested? Read on to learn more about this exciting career.

Dr Leonie Simpson
Senior Lecturer

Check out CareerswithSTEM.com for more insights, information, inspiration and advice about cyber security careers!

Scams, skills and salaries

Get an insight into the world of information security

Job to-do list

Things to do today...

- ☐ Assess risks to security
- ☐ Determine any weaknesses
- ☐ Plan defence strategies
- ☐ Stay up-to-date with best practice through networking and research
- ☐ Train staff and help them stay up-to-date with security best practices
- ☐ Report to the chief security officer on the organisation's cyber security 'posture' or readiness and capability
- ☐ Install software such as firewalls and data encryption programs

MYTH

Buster!

#1 You're likely to be a hoodie-wearing male hacker.

There's a diversity problem in cyber security — but women and non-binary people are just as qualified and are highly sought after by employers.

FALSE

#2 You need to know how to code.

Your job will involve installing software like firewalls and data encryption software. So you need to be interested in technology, but you don't need to be a developer.

FALSE

#3 You'll work alone at your desk.

Teamwork is a huge part of the job — training staff, thought leadership within your organisation and networking to stay on top of security trends are all critical skills.

FALSE

I'VE BEEN SCAMMED

Scams as simple as a phishing can have huge consequences. One Australian hedge fund (a type of investment fund) folded after one of the directors was fooled into clicking a fake Zoom link. The link allowed hackers to install software that enabled them to take control of the company's email, their biggest client pulled out of the business and they lost a \$16 million investment.

A ransomware attack on the Lion dairy and drinks business shut down production at Lion's breweries and milk production plants. The company is Australia's largest beer brewer and one of the top five dairy processors.

In 2015, Fiat Chrysler recalled 1.4 million cars after security researchers revealed a flaw in the internet-connected entertainment system allowed hackers to control the brakes, speed, steering, seatbelts, air con and radio.

The Australian government's ScamWatch website logged more than \$176 million lost as a result of scams in 2020. The top three scams by amount lost were investment scams, dating and romance, and false billing. The most frequently reported scams were phishing, threats to life, arrest or other and identity theft.

Get Qualified

- ✓ **Option #1:** Do an IT, engineering or science degree and specialise.
- ✓ **Option #2:** Do any degree and then do a postgraduate degree in cyber security.
- ✓ **Option #3:** Study a certificate or short courses through TAFE or uni.
- ✓ **Option #4:** Do a cyber security boot camp course.

LEARN THE LINGO

Cryptography: Techniques to keep information secure by using codes, scrambling techniques and keys.

Network security: Rules and set-ups designed to protect networked devices from hacks. Networked devices can include drones, fridges, TVs, road signs, or even vehicles.

Phishing: An attempt to get you to provide information that can be used for cyber crimes like banking details, personal information or passwords.

About YOU!

- ✓ Interest in coding and technology
- ✓ Team player
- ✓ Good communicator
- ✓ Passion for problem-solving
- ✓ Analytical thinker
- ✓ Good attention to detail

IN THE BANK

IF YOU ARE BUDGETING WHAT A JOB AS AN INFORMATION SECURITY ANALYST IS PAYING, TAKE A LOOK AT THESE NUMBERS

Graduate Information Security Analyst

\$59K

AU\$82,459 / year Avg. Base Salary (AUD)

A few years on the clock

\$132K

Graduate Information Security Manager

\$96K

AU\$128,074 / year Avg. Base Salary (AUD)

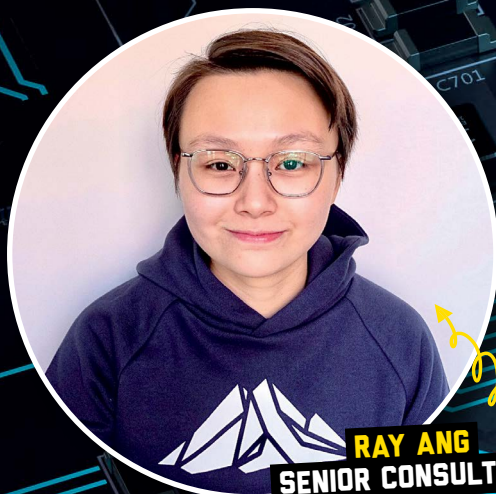
A few years on the clock

\$178K

SOURCE: SALARIES ACCORDING TO Payscale.COM

KEEPING THE HACKERS OUT

RAY ANG DESIGNS SMART SOLUTIONS THAT HELP BUSINESSES KEEP THEIR INFORMATION SAFE ON THE WEB



RAY ANG
SENIOR CONSULTANT

Working in data trust and privacy is a dream job for computer wizards, but Ray Ang takes a human approach to protecting people's information online. "Helping people to stay savvy online is my ultimate motivation," says Ray. "I aim to get everyone on the same page when it comes to data protection."

Ray works as a senior consultant in data trust and privacy at PwC Australia, a role which involves designing cyber security solutions that businesses and government organisations can put into action with a few clicks of a mouse.

Rather than spending her day glued to a computer screen, Ray is busy meeting with clients and brainstorming smart solutions with her colleagues.

"It's so rewarding to see our clients happy with the solutions that we provide," says Ray. "It can make a big difference to society."

Moving from technology to cyber security

When Ray majored in information systems for her Information Technology degree at QUT, she hadn't considered working in data trust and privacy. But during a unit about design thinking, Ray learned that there is no one-size-fits-all approach to developing digital solutions for different users, a lesson that is central in her current role.

I AIM TO GET EVERYONE ON THE SAME PAGE WHEN IT COMES TO DATA PROTECTION."

"Design thinking ensures that solutions are human-centred and fit for the client," says Ray. "That has followed me ever since I did that subject at uni."

A key to Ray's success was gaining work experience during uni as a digital intern at Australian petcare company PetCloud and at Accenture in her home country, Malaysia. These internships not only helped Ray build her resume while studying, but also gave her experience working in different countries.

Ray's advice to budding data trust and privacy experts is to step outside your comfort zone and try new things, even if you don't think you're capable.

"Be open minded," she says. "Do what you cannot do, so that you know what you *can* do." – Gemma Conroy

BACHELOR OF INFORMATION TECHNOLOGY
(INFORMATION SYSTEMS), QUT

INTERN.
PETCLOUD

INTERN.
ACCENTURE

INTERN. PWC

CONSULTANT, DATA GOVERNANCE
AND RISK MANAGEMENT, PWC

SENIOR CONSULTANT,
DATA TRUST AND PRIVACY, PWC

A day in the life of a... **BUSINESS ANALYST**

A double degree in business and Information Technology landed **Emily Entwistle** a sweet gig as an analyst

Making people's lives easier is one of the best things about being a business analyst, says Emily Entwistle.

"Small software problems can be a real point of frustration," says Emily. "Being able to understand how we can improve things for customers is really fulfilling."

In her role at TechnologyOne, Emily makes management software tools easier for customers to use. While information security analysts develop ways to protect systems against hackers, business analysts like Emily focus on finding solutions to meet business requirements. Both roles draw on a similar skill set and involve making software as secure as possible.

"The analytical and critical thinking skills crossover a lot," says Emily. "You also have to understand how people are going to use the software."

While Emily was interested in all things business in high school, doing a combined degree in Business and Information Technology at QUT sparked her interest in using tech to solve problems for businesses. She says that joining different groups at uni, such as QUT Women in Technology, helped her form career-building connections.

"Get out there and find out what pathways there are," says Emily. "That's what I tried to do, and it worked out pretty well!"

FIND OUT WHAT PATHWAYS THERE ARE."

Here's what a typical day looks like:

9:15am

I start the day with a stand-up meeting with my team to talk about what we're working on.

10:30am

There's no such thing as a typical day! A lot of it depends on software release cycles. I could be working on research tasks or looking through customer cases that have been raised.

12:15pm

I jump on call with a customer to do some usability testing, which involves walking them through the software. We work through different scenarios and I capture their feedback along the way.

2:00pm

Join another meeting! This one is with some QUT capstone students to talk about the projects they're working on with us.

3:45pm

I record a webinar for TechnologyOne's User Connect, which is a series of seminars where customers can learn about the latest features and updates.

5:30pm

I like to go bouldering, which is a pretty common hobby for tech people. It must be all of the problem solving and planning! – Gemma Conroy

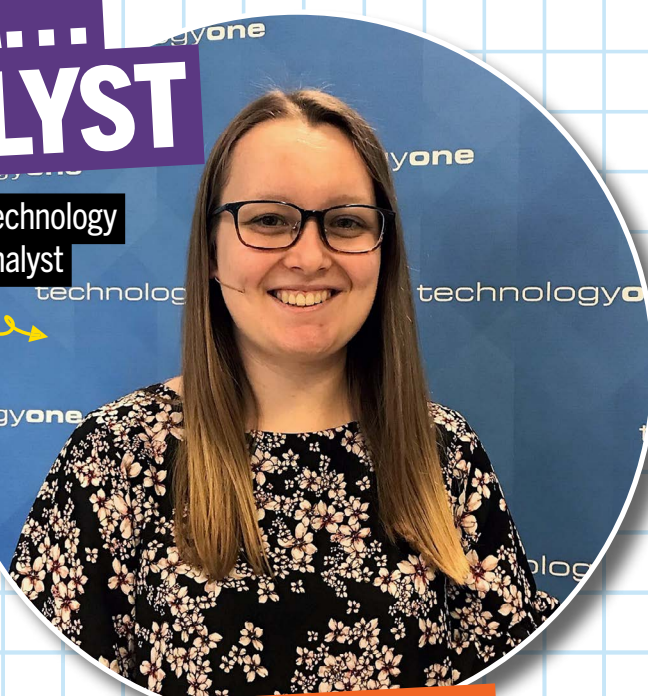


IMAGE: SHUTTERSTOCK

BUSINESS ANALYST.
TECHNOLOGYONE

GRADUATE BUSINESS
ANALYST. TECHNOLOGYONE

INTERN. TECHNICAL BUSINESS
ANALYST. DELOITTE DIGITAL

BACHELOR OF BUSINESS/BACHELOR OF INFORMATION
TECHNOLOGY (MANAGEMENT/COMPUTER SCIENCE). QUT

Get the job!

Watch, stalk and puzzle your way into this amazing career area

JUST FOR CLASS

Activities for single students and schools

#1 Explore the Australian Signals Directorate's interactive CyberEXP program and get experience with different cyber security roles like penetration tester, malware analyst and incident responder. bit.ly/2YBw3eu

#2 Take the Schools Cyber Security Challenges – realistic learning modules that up your skills in coding, cyber security and teamwork in a series of fun challenges. aca.edu.au/projects/cyber-challenges

#3 Test your skills in Capture the Flag (CTF) challenges. Part puzzle, part pizza party, these competitions see teams pit their wits against each other to decipher clues and undertake fun ethical hacking and counter hacking activities.

- Western Australia's WACTF: capture.tf
- AustCyber: bit.ly/austcyber-challenges
- CSIRO's CyberTaipan: digitalcareers.csiro.au/en/CTaipan
- Regional Cyber Challenge: regionalcyberchallenge.com

Electives checklist

Choosing high school electives? These subjects will help you get your head around cyber security skills for your future:

- ✓ Maths
- ✓ Digital technologies
- ✓ English (analytical thinking, attention to detail)

Choose this career if you are...

- > Interested in coding and technology
- > A team player
- > A great communicator
- > Have a passion for problem-solving
- > An analytical thinker
- > Great with small details

SOCIAL STUFF

- Join the nearly 4M people on YouTube who watched BBC's Spying on the Scammers bit.ly/3oGHXh0
- Read ALL about cyber security careers in Careers with STEM: Cyber Security mag bit.ly/CyberMag
- Check out these 20+ cyber security career profiles bit.ly/CwSTEMcyber
- Follow @auscompacademy and get great coding tips

