

CAREERS WITH STEM™

CYBER SECURITY



**CYBER
GRADUATES**



Quiz:
What's your
cyber style?

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How to
become a
real-life spy

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looking for
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Commonwealth Bank

(YOU)^{us}

CAN OUTSMART CYBERCRIMINALS

Cybercriminals are exploiting the internet's speed and anonymity to drive a global crime wave with many organisations struggling to find the employees they need to fight back.

You can lead the fight against cybercrime with a degree from Macquarie. Our cybersecurity courses have been developed in consultation with experts from government and industry and combine insights into the motivations, mindsets and capabilities of cybercriminals with in-demand expertise in:

- information security and data privacy
- ethical hacking
- offensive security
- digital forensics
- applied cryptography
- secure coding
- artificial intelligence.

You'll also complete an industry-based project to solve a real-world problem and take part in hackathon competitions to hone your skills.



MACQUARIE
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SECURITY IS EVERYONE'S BUSINESS

No matter what your career path looks like, cyber security is probably going to factor in at some point. That's how broad and important this sector is!

You might be reading this because you already have your sights set on a cyber security career. Or maybe you're 'cyber curious', wondering what it's all about and whether it's for you. The truth is cyber security careers are broad and demand for diverse talent is super-high, so chances are there's a job out there that would suit you! My role as Executive Manager, Cyber Secure Networks and Cloud at Commonwealth Bank (CBA) means I'm in charge of big-picture stuff when it comes to how the bank manages its cyber risk. But a career in cyber security wasn't necessarily on the cards for me from the beginning.

MY PATHWAY INTO CYBER SECURITY

In high school, I loved maths and thought I wanted to be a physicist, but decided to sign up for a degree in telecommunications engineering, combined with a Bachelor of Business. The engineering degree, would make me really employable, while the business degree would equip me with transferable skills and still contain plenty of my beloved maths and numbers, as I majored in finance.

My first job after uni came out of a summer internship at Macquarie Group. I spent 10 years there and my career evolved from a technical role as a network engineer to one focusing more on security. I later moved into a network security job at CBA and eventually into my current role.

THROUGH A SECURITY LENS

While a lot of people in my team have technical backgrounds, our motto is that "security is everyone's business" – because everything we do can be looked at through a security lens.

ONE OF THE BEST THINGS ABOUT A CAREER IN CYBER SECURITY IS THE DIVERSITY"



VIVIAN LEE-KEO
EXECUTIVE MANAGER, CYBER
SECURE NETWORKS AND CLOUD,
COMMONWEALTH BANK

One of the best things about a career in cyber security is the diversity. Even just within our bank, we have many different cyber security teams – as a graduate here, you could choose to follow a really technical path or you might be more interested in a bigger-picture governance or intelligence role.

That diversity applies to the work as well. Every day is different and you're always trying to figure out what might happen next. Even when you read the morning news about global political tensions or hear about something trending online, it could all factor into the cyber security risks you face that day!

In this magazine, you'll meet cyber specialists working with me at CBA, but also at big tech firms like Google and in other more surprising sectors. You'll also get a sense of just how much this sector is growing and the types of jobs that are out there.

If that all sounds exciting, my advice is to follow your passion and keep that cyber security lens in mind, and you'll find the path to your dream job.

Vivian Lee-Keo
Executive Manager, Cyber Secure Networks and Cloud, Commonwealth Bank

EXECUTIVE MANAGER,
CYBER SECURE NETWORKS AND
CLOUD, COMMONWEALTH BANK

CYBER PRODUCT OWNER,
NETWORK SECURITY,
COMMONWEALTH BANK

NETWORK SECURITY TECH
LEAD, MACQUARIE GROUP

NETWORK ENGINEER,
MACQUARIE GROUP

BACHELOR OF ENGINEERING
(TELECOMMUNICATIONS) / BACHELOR
OF BUSINESS (FINANCE), UTS

SHUTTERSTOCK

WHAT'S YOUR CYBER STYLE?

NOT EVERYONE GETS INTO CYBER SECURITY FOR THE SAME REASON – WHICH IS GREAT, BECAUSE THE SECTOR NEEDS DIVERSE TALENT! TAKE OUR QUIZ TO FIND OUT WHERE YOU MIGHT FIT – THEN MEET YOUR FUTURE MENTOR

1 You can only press play on one of the below Netflix shows – which one gets your pick?

A.



B.



C.



2 Which of the below sounds like the best way to spend a rainy weekend?

- A. Bingeing true-crime docos and podcasts in my PJs
- B. Anything arty – painting, sketching, making music, writing stories
- C. On my computer! Gaming, coding, chatting with friends

3 Which of these high school subjects tops the list for you?

- A. Legal studies
- B. Visual arts
- C. Digital technologies

4 Which of these would feature most in your dream career?

- A. Being engaged with current politics and news
- B. A lot of creativity and collaboration
- C. Working with cutting-edge tech every day

5 Which of these skills are you strongest in?

- A. Learning new things and adapting
- B. Thinking outside the box and solving problems
- C. Knowing my way around anything digital

ANSWERS

Mostly As: CYBER CURIOUS

You're a big-picture thinker and curious by nature, up to date with news, global politics and always immersed in a podcast or doco. Cyber security needs people like you – experts who are tuned in to global political tensions and understand human behaviour and psychology. You might choose to jump straight into a cyber degree after school, or take a more niche pathway via criminology, psychology or law.

Meet your mentor: Read about Holly Takos's path from cycling to criminology to cyber security on page 5.

Mostly Bs: CYBER CREATIVE

You are arty by nature, you think outside the box and surprise people with your original, creative approaches to problem-solving. You know who also has to be super-creative? Hackers. The cyber security sector needs people like you to stay one step ahead of the next attack. Communication is also super-important in this sector – think coming up with a company's cyber policies and explaining them in a clear, engaging way.

Meet your mentor: Read about how Tori Birch uses her creative skills in her cyber career on page 6.

Mostly Cs: CYBER CERTAIN

You're a tech fiend and probably already have your sights set on a career in cyber security. Awesome! The sector needs people who live and breathe digital to build secure networks and systems, and keep businesses, government and people safe from cyber criminals. Don't forget to nurture other skills if you plan on pursuing a career in cyber – communications, organisation, problem-solving and people skills also play a big part.

Meet your mentor: Ben Sumners found his dream job at Commonwealth Bank. Read his story on page 7.

CYBER CURIOUS

A love of true-crime shows turned into a career in cyber security for former pro track cyclist **Holly Takos**

"I've always been extremely curious about understanding what drives people to commit crimes, from a behavioural and cultural lens," says Holly.

While competing internationally as a pro track cyclist, she took this passion and signed up for a Bachelor of Criminology at Flinders University, following it up with a Graduate Certificate in Fraud and Financial Crime at Charles Sturt University.

Holly says she was spoilt for choice when it came to areas to study in her degree, but she developed a particular interest in the ways crime is evolving with technology and the internet. "Society is constantly having to adapt to changes in how traditional crimes are being carried out through new technologies, as well as to detect and respond to crime types we haven't seen before," she says.

Keeping your career on track

Holly's path isn't typical for a cyber security specialist – not only is a criminology degree less common in this field, but pro cycling even less so! Having competed in and won international events, she retired to complete her studies, then landed her current gig as a technology graduate at Commonwealth Bank, working in cyber security.

"Coming from a background that wasn't deemed a traditional entryway into the field was extremely intimidating and I struggled with the confidence at first," says Holly.

However, not only has her supportive team helped her through any nagging 'imposter syndrome', but she's also learnt that diverse backgrounds can be a real asset. "The wider the variety of people and experience that we have working to defend our systems and networks, the better chances we have!"

The best bit? Holly's cyber career is totally fulfilling her fascination with the criminal mind. "A quote that has always stuck with me is that, while technology is the playing field, the players are human beings," she says.

HOLLY TAKOS
TECHNOLOGY GRADUATE

**SOCIETY IS
CONSTANTLY HAVING
TO ADAPT TO CHANGES
IN HOW TRADITIONAL
CRIMES ARE BEING
CARRIED OUT THROUGH
NEW TECHNOLOGIES"**

PROFESSIONAL CYCLIST,
AUSTRALIAN CYCLING TEAM

BACHELOR OF CRIMINOLOGY,
FLINDERS UNIVERSITY

GRADUATE CERTIFICATE IN
FRAUD AND FINANCIAL CRIME,
CHARLES STURT UNIVERSITY

TECHNOLOGY
GRADUATE, CYBER,
COMMONWEALTH BANK

CYBER CREATIVE

Victoria 'Tori' Birch loves art and communications, and she's now helping keep Australia's biggest bank safe from hackers as a cyber security graduate

**VICTORIA
'TORI' BIRCH**
TECHNOLOGY
GRADUATE

TECHNOLOGY GRADUATE.
CYBER. COMMONWEALTH BANK

MANUFACTURING DIVISION COMPUTER
SCIENTIST INTERN. RESMED

BUSINESS ANALYST
REPORTING AND ANALYTICS
SOLUTIONS. WESTPAC GROUP

INTERN.
WISETECH GLOBAL

BACHELOR OF SCIENCE
(COMPUTER SCIENCE) |
[CO-OP SCHOLARSHIP]. UNSW

We know there's a shortage of girls studying STEM, while often the ones who do choose it come from families of engineers or scientists. Yet Tori's mother is a cellist and in high school Tori had her sights set on becoming a teacher.

"I wish someone had told 13-year-old me that I didn't need to be a stereotypical computer scientist to study computer science," she says. "Stereotypes that they're all socially awkward, energy drink-addicted, middle-aged men interfered with my ability to see myself – a young, creativity-driven female – as a computer scientist."

Thankfully, a STEM event at her high school opened her eyes to what computer science careers could really be about. "I saw that there was, in fact, creativity and artistry in technology," she says.

Talking tech

Tori signed up for a Bachelor of Science (Computer Science) at UNSW Sydney through the university's Co-op scholarship program, meaning she completed three industry placements during her studies.

"I found throughout my internships that I accomplished the most in roles where I was able to talk and discuss

technology with my peers," she says. "Although I wasn't exactly sure where my career would take me, I knew I wanted a role where I could interact and communicate with my colleagues."

After graduating, Tori joined Commonwealth Bank as a technology graduate (cyber), using her STEM skills, creativity and knack for communication to help keep the bank and its customers safe from hackers.

"For me, this is the perfect blend of the technical and non-technical," she says.

Tori is passionate about inspiring more people like her to pursue careers they might think aren't for them. "The STEM industry thrives on creativity and originality," she says. "Despite this, the industry lacks diversity which, in turn, means there is less diversity of thought. If I could give advice to students, it would be to not cut yourself off from opportunities simply because you don't see yourself represented in that field or in its media."

**THE STEM INDUSTRY
IS ONE THAT THRIVES ON
CREATIVITY AND ORIGINALITY"**

CYBER CERTAIN

Originally a self-taught “tech nerd”, **Ben Summers** is loving his career in cyber security at Commonwealth Bank

BEN SUMMERS
TECHNOLOGY GRADUATE 2023

Ben says he can't remember when he first got into tech – it's just always been a part of his life. However, there were no tech classes at his school, “so everything I had to learn was through self-guided study”, he says. This meant there was a pretty big gap in his knowledge as to what careers were available to him: “I always just assumed there were maybe only a few jobs that I could do, like hacking and IT repair.”

Even when Ben signed up for a Bachelor of Cyber Security at Macquarie University, he did so because it sounded interesting – but he still didn't really understand how diverse the job landscape is. “I understand now there are literally hundreds of different roles just in cyber security alone,” he says.

LIVING THE DREAM

Through the CareerTrackers Indigenous internship program, Ben undertook summer

placements at Commonwealth Bank as a cyber security advisor every year of his degree, so he must have felt pretty familiar with the place when he landed a graduate role at the bank!

Currently working on secure internet access, designing policies and guidelines for employees, Ben loves being able to question how things are done and implement best practice – his focus right now being a project that will shift the way his team monitors internet access, further improving security.

“I'm currently living my dream job and love everything that I'm doing,” he says.

Ben's advice for anyone interested in a career in cyber security is to just go for it.

“It's a career that will never die,” he says.

“You won't regret it.”

And whatever your background looks like, whatever path you end up taking, Ben says you can always give your career a kickstart right now by being a self-directed learner like he was. “There are thousands of good introductions to cyber security on the internet.” – *Gemma Chilton*

I UNDERSTAND NOW THERE ARE LITERALLY HUNDREDS OF DIFFERENT ROLES JUST IN CYBER SECURITY ALONE!”

BACHELOR OF CYBER SECURITY,
MACQUARIE UNIVERSITY

CAREERTRACKERS INDIGENOUS INTERNSHIP PROGRAM,
CYBER SECURITY ADVISOR, COMMONWEALTH BANK

TECHNOLOGY GRADUATE (2023),
CYBER, COMMONWEALTH BANK

INCREDIBLE INDUSTRIES!

Not all cyber-skilled grads work for banks or big tech – here are just a few other sectors where you could land a job in cyber security

In our increasingly connected and digital world, cyber security is everyone's business. If you're wondering where you might land a job after skilling up in this exciting and in-demand sector, you might be surprised how many opportunities there are! – Craig Ford

What's the Internet of Things?

When we talk about IoT, we mean all the devices that are connected to the internet – for example, for automated updates or to communicate useful or important data.

TRANSPORT

Driverless cars aren't the stuff of science fiction – they're speeding into the present right now, with companies like Tesla releasing semi-autonomous vehicles that practically drive themselves. One day, cars might not even have a steering wheel!

These vehicles need a lot of inbuilt technology to drive unassisted. But would you trust a car driving you around if it was at risk of being hacked?

We need cyber security pros to help test these systems by trying to break and manipulate them – before the bad guys figure it out. For example, you could review the software during development and help plug security vulnerabilities before the new version of the car's software is released.

This industry has been criticised for not building enough cyber security into its systems – which means huge career potential for aspiring cyber heroes willing to join the effort to make them safer!

HEALTHCARE

You'd be surprised how many cyber risks the healthcare industry faces every day. As a cyber pro in this sector, you could work on IoT (Internet of Things) and the security of devices like pacemakers or insulin pumps, which are surgically attached to patients. These are connected to the internet and at risk of being hacked, with potentially deadly results!

Patient data and medical systems also need to be protected, and we need smart people to keep our health data safe from malicious hackers. With 73% of Australia's reported cyber attacks for the 2020-21 financial year targeting the healthcare sector, there is huge demand for cyber heroes who want to make a difference and save lives.

BONUS SECTOR: MEDIA

Did you know you could also apply your cyber security skills as a writer, like author and journalist Craig Ford, who wrote this article and the one about becoming a cyber spy on p12.

Craig started his career in IT, before moving into cyber security. He has applied his expertise as a cyber consultant for the Australian Tax Office and is the Queensland chair of the Australian Information Security Association. Craig's writing has appeared in publications including *Cyber Today*, *Cyber Australia* and *Women in Security Magazine*. He is also the author of three books: *A Hacker I Am* (1 & 2) and *Foresight*.

@CraigFord_Cyber



FOOD AND FARMING

You might be surprised to see farming on this list! Why would we need cyber protection for crops or livestock? In fact, many modern farms use tech for all sorts of things – for example, sensors that track how much feed animals eat from their troughs. If someone manipulates that data, animals could starve or be overfed, sending a farm broke due to excessive costs!

This sector also involves manufacturing and processing facilities like factories, which rely heavily on the use of technology and sensors. What would happen if our food supply chain suddenly shut down and no food was made or packaged?

We have seen cyber attacks affect logistics in recent times, with ransomware breaches against companies Toll and TNT, which transport food supplies.

RICHARD BURKE INFORMATION SECURITY MANAGER, GRAINCORP



It's **Richard Burke's** job to keep one of Australia's biggest players in food security cyber-safe

As information security manager at Australian Agribusiness GrainCorp, when war broke out in Ukraine in 2022, Richard's job involved providing secure communication channels to GrainCorp's small Kyiv-based team, including protecting their personal location data.

"It was a meaningful project, knowing the very real risks our employees were exposed to," he says.

Richard studied IT at TAFE before enrolling in a Bachelor of Science (Information Technology) at RMIT, but dropped out after his first year as he was already working in the sector.

"It was only as my career progressed that I realised how valuable that education actually was and felt like I had fallen behind."

So Richard signed up for a Master of IT (Management) at Macquarie University and is now working on a project assessing the cyber risk of Graincorp's key suppliers, "with the ultimate goal of protecting global food supply", he explains.

IT MANAGER, SONY DADC
SYSTEMS ADMINISTRATOR, MACQUARIE UNIVERSITY
INFORMATION SECURITY MANAGER, GRAINCORP
HEAD OF INFORMATION SECURITY, RICOH AUSTRALIA
MASTER OF IT (MANAGEMENT), MACQUARIE UNIVERSITY
DIPLOMA OF NETWORK ENGINEERING, TAFE NSW
SENIOR IT PROJECT MANAGER, RICOH AUSTRALIA

RETAIL

The retail sector made up 4% of Australia's cyber victims by industry in the Australian Cyber Security Centre's 2020-21 cyber report.

And it's not just online shopping that's at risk – the world of retail is merging at warp speed with connected platforms, including Meta, the company that owns Facebook. Just imagine the amount of data retail stores hold: often our name, date of birth, address and shopping habits, just for a start! This makes the sector a growing target for cyber attacks – so demand for cyber-skilled pros is growing too.

Emily Harmon's career at hardware giant Bunnings has progressed from checkout to cyber security

When Emily was working in a customer-facing role at Bunnings, she would occasionally have to phone IT support. On those calls, she found she was curious about the job of the people on the other end of the line.

"I was also interested in how all our systems and tech interacted together," she says. Emily was inspired enough that she enrolled in a Bachelor of Computer Science (Software Engineering) at Edith Cowan University. Then, after particularly enjoying a computer security subject, she switched her major to cyber security.

Emily, who is still completing her undergrad, has now been working at Bunnings for nine years and is part of the company's cyber operations team, managing access privileges, policies and procedures for more than 55,000 employees.

EMILY HARMON CYBER SECURITY ADMINISTRATOR, BUNNINGS



TEAM MEMBER,
BUNNINGS

BACHELOR OF COMPUTER SCIENCE
(CYBER SECURITY), EDITH COWAN UNIVERSITY

IT SERVICE DESK,
BUNNINGS

CYBER SECURITY
ADMINISTRATOR, BUNNINGS

**EMILY
MAJOR-GOLDSMITH**
CYBER SECURITY CONSULTANT



A well-rounded career

Cyber security consultant **Emily Major-Goldsmith** loves the flexibility and diversity of working in the sector

As a cyber security consultant at Kinetic IT in Perth, Emily says no two days are ever the same. Her role involves analysing IT systems to find risks that hackers could exploit and coming up with options to stop them. But she also pursues her interests in marketing and community participation.

"I get to mentor high school students, work within the community and write articles and information pieces relevant to cyber," says Emily.

Another great perk is job flexibility. Emily works three days a week from home and is currently on an extended break, spending time with family in the UK and travelling around Europe.

HARD AND SOFT SKILLS

Emily was initially attracted to cyber security by the job opportunities and great pay.

"I started to look closely into the industry and the careers available, and a curiosity was sparked," she says.

Emily decided to study a Bachelor of Science (Cyber Security) at Edith Cowan University (ECU) – the only Perth uni to offer a standalone degree at the time. She says her time at ECU also offered valuable opportunities

to develop her skills as an ambassador and speaker. "Technical skills are important, but soft skills take you a long way in this industry."

During her degree, Emily worked as a service desk technician at Kinetic IT, which turned into an Associate Security Consultant position after she completed an industry placement during her final semester.

DIVERSE GRADS NEEDED!

Emily says inspiring a diverse next gen of cyber security grads is a top priority because, to outwit hackers, we need people with a wide range of backgrounds and thinking styles. "The cyber industry is expanding into almost every field you can think of. Without a new generation of diverse grads, we are going to struggle to meet all our challenges!"

**TECHNICAL SKILLS ARE
IMPORTANT, BUT SOFT SKILLS
TAKE YOU A LONG WAY IN
THIS INDUSTRY"**

SECURITY CONSULTANT,
KINETIC IT

SERVICE DESK
TECHNICIAN, KINETIC IT

AMBASSADOR AND
PRESENTER, EDITH
COWAN UNIVERSITY

BACHELOR OF SCIENCE
(CYBER SECURITY),
EDITH COWAN UNIVERSITY

CYBER SECURITY AT ECU



AUSTRALIA'S ONLY INTERNATIONAL CYBER SECURITY CENTRE OF EXCELLENCE

With our reliance on internet-based technology, there's never been a greater need to protect Australian businesses, government and the community.

ECU offers the largest academic cyber security and research program in Australia. We are the first and only university from Australia to join the International Cyber Security Centre of Excellence as an Affiliate Member. The organisation was initiated in 2019 by universities across UK, Europe, the US and Japan and acts as a hub for cyber security research, education and advocacy.

ECU's Security Research Institute (ECUSRI) offers world-class research in Cyber Security, Critical Infrastructure Security, Digital Forensics and Human Security, and has a history of delivering successful research projects for Federal and Defence agencies. Our cyber team includes a member from the Interpol Global Cybercrime Expert Group.

Our world-class teaching and research facilities feature state-of-the-art computer laboratories to support our Cyber Security courses including a red/blue teaming room and two Security Operation Centre spaces.

**TO FIND OUT MORE, VISIT
[ECUWORLDREADY.COM.AU/CYBER-SECURITY](https://ecuworlready.com.au/cyber-security) —**

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CYBER Q+A

We sat down with real-life cyber pros in different roles to ask your burning study and career questions

HACKING CYBER STUDY

THOMAS BIENASZ
CYBER TECHNOLOGIST,
DARKTRACE

Helping his parents navigate technology as a child sparked Thomas's interest in tech. Fast-forward to high school and cyber security stood out when it came time to consider his career options.

"I saw it as a promising career pathway with jobs in the future and lots of interesting opportunities," he says.

Thomas completed a Bachelor of Cyber Security at Macquarie University, then scored a role at Darktrace, an artificial intelligence company and global leader in cyber security.

As a cyber technologist, he's responsible for providing technical and cyber defence expertise to Darktrace's customers, including McLaren Racing, Commonwealth Bank and Bunnings.

TRY TO DO AS MANY IT COURSES AS POSSIBLE FOR YOUR ELECTIVE SUBJECTS"

CwS: What was the coolest thing you did or learnt while studying cyber security at Macquarie Uni?

Thomas: In one subject, we learnt some of the ways to breach systems using hacking techniques. It was really interesting to research that and see systems from a cyber attacker's perspective. Another cool subject was digital forensics – we got to look at how a user might try to delete mass amounts of documents from their hard drive, but using special software we can still view it.

CwS: How is a cyber security degree different to a computer science or IT degree?

Thomas: Cyber security is a niche. IT and computer science degrees are more about classic programming and coding. There's still coding in cyber security, but it's more about being on your toes and aware of your surroundings, and being able to anticipate and think like the attacker. We learn how to make a barrier to make it less likely for attackers to perform successful hacks.

CwS: I'm still in high school – what kind of things can I be doing right now to set myself up for a career in cyber security?

Thomas: Try to do as many IT courses at school as possible for your elective subjects. I only did one and didn't realise I could do more, which probably would have been beneficial for me for uni. There are also some great YouTube documentaries on things like scams and hacks that have been occurring recently – that will help you be on top of what's going on in the world.

CYBER TECHNOLOGIST,
DARKTRACE

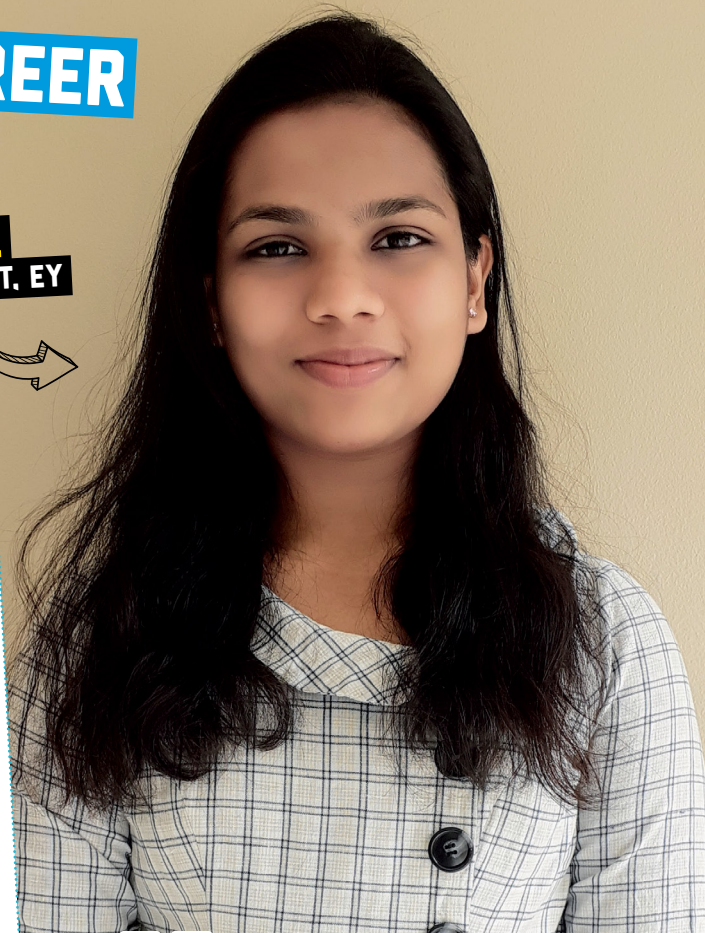
INTERNSHIP
AT BT

BACHELOR OF CYBER SECURITY,
MACQUARIE UNIVERSITY

DANIELLE LUCAS

SECURING A CAREER IN CYBER

KAVIKA SINGHAL
CYBER SECURITY CONSULTANT, EY



Curiosity and a strong desire to make a difference kickstarted Kavika's career in cyber security – although, to begin with, she had no background in information technology or coding.

“Establishing myself as an industry professional has been a roller-coaster ride,” she explains.

Kavika enrolled in a Bachelor of Cyber Security and Behaviour at Western Sydney University. Her career path since then has included working as a private investigator at a company called Cybertrace, an internship with Google and her current gig as a cyber security consultant at professional services company EY (aka Ernst & Young).

CYBER SECURITY WILL BE A NECESSITY IN EVERY INDUSTRY THAT USES TECHNOLOGY”

CwS: What is it that makes cyber security such a cool career to get into?

Kavika: Cyber security is a hub for innovation and advancement, owing to the new changes in technology. If challenges keep your adrenaline running and learning is your favourite subject, cyber security is the best place for you.

CwS: What should I study after school if I want to work in cyber security?

Kavika: Any technology degree! Australian universities and TAFE run many cyber security programs to help aspiring cyber security professionals learn and gain experience in the industry. However, if you are interested in engineering, artificial intelligence (AI), machine learning, blockchain, computer science or information technology, these fields are a great stepping stone to aim for a cyber security career.

In the near future, cyber security will be a necessity in every industry that uses technology, so you aren't bound by any limitations on your exploration journey!

CwS: I don't know how to code! Could I still get a job in cyber security?

Kavika: Yes, of course! Coding is not a prerequisite for building a lot of cyber security jobs. The level of coding knowledge required depends on your chosen niche for the field, however you can gain the skills on the job.

CwS: Best thing about your job?

Kavika: Real impact and collaboration. Cyber security is not a one-person job; many teams come together to defend against cyber criminals. At the end of the job, I love the feeling of making a genuine impact in the world through my work.

BACHELOR OF CYBER SECURITY AND
BEHAVIOUR, WESTERN SYDNEY UNIVERSITY

CYBER CRIME INVESTIGATOR,
CYBERTRACE

INFORMATION TECHNOLOGY
INTERN, GOOGLE

MICROSOFT LEARN
STUDENT AMBASSADOR

RESEARCH ASSISTANT,
WESTERN SYDNEY UNIVERSITY

CYBER SECURITY
CONSULTANT, EY

DISCOVERING CYBER

AFTER A DIFFICULT FIRST YEAR OF HER TECH DEGREE, **FRANCES LEE** STUCK AROUND AND NOW HAS A SUCCESSFUL CAREER AS A SECURITY ENGINEER AT GOOGLE

CYBER STATS

The need for cyber talent is sky-high – with plenty of career opportunities (and perks) for people with the right skills. But don't just take our word for it! Here are the numbers

\$15.7 BILLION generated in cyber security revenue in 2019-20

17,000 more jobs in cyber predicted by 2026

\$7.6 BILLION predicted to be spent annually on cyber in Australia by 2024

67,500 Cyber crimes reported to the Australian Cyber Security Centre (ACSC) in 2020-21

\$33 BILLION Losses resulting from cyber crime in 2020-21

\$9.9 BILLION towards ramping up Australia's cyber security capabilities in the 2022 Federal Budget

2022 The year Australia became the first-ever G20 nation with a dedicated Minister for Cyber Security, Clare O'Neil

25% of Australia's cyber security workforce are women – almost twice as high as the global average, but with room for improvement!

57% of businesses report having trouble finding skilled cyber security staff

Sources: YourCareer.gov.au; AustCyber; ACSC Annual Cyber Threat Report (2020-21); The Guardian; McAfee Cyber Security Talent Report

FRANCES LEE
SECURITY ENGINEER.
GOOGLE

EVERYONE HAS A MULTITUDE OF DIFFERENT SKILLS AND EXPERIENCES"

Frances was still exploring her options when she attended a cyber security talk at a UNSW open day and was fascinated, so she went home and started reading more about it. She loved the idea of a career that would help people and make the internet a safer place, signing up for a Bachelor of Science (Computer Science) at UNSW.

Her path wasn't all smooth sailing, though. Frances failed a subject in her first year of uni and considered switching degrees! However, as she hadn't actually started any cyber security subjects yet, she decided to stick around for another term.

"Luckily I did and I'm here now!" says Frances, who not only now has her degree under her belt, but works as a security engineer at Google, where she helps automate workflows for the security team and also assesses the security of third parties that Google works with.

A highlight of her job? Working with a diverse team of talented people.

"Everyone has a multitude of different skills and experiences and it is incredibly insightful to learn and pick their brain on a myriad of different topics," she says. – Gemma Chilton

BACHELOR OF SCIENCE
(COMPUTER SCIENCE). UNSW

CYBER RISK ADVISORY
INTERN. DELOITTE

SECURITY ENGINEER.
GOOGLE

Become a SPY!

You could become a cyber spy, working in a top-secret gig for one of many government agencies to help keep Australia safe

Who doesn't love a thrilling, edge-of-your-seat cyber spy movie, with skilled hackers, super-secret foreign agencies and loads of action?

Of course, the reality of a career as a cyber spy isn't quite so Hollywood, but if you want a career that lets you use the most cutting-edge techniques to fight the biggest and scariest threats, then a job as a cyber security or threat intelligence analyst in one of Australia's government agencies could be for you!

The good news is that now is the best time to sign up for a cyber spy career, thanks to the Australian government's recent \$9.9 billion investment over 10 years targeted at building national intelligence and cyber capabilities. – Craig Ford

MEET A REAL-LIFE SPY!

BRADLEY DEACON HAS A BACKGROUND IN LAW AND CYBER CRIME. AND ONCE WORKED AS A FEDERAL AGENT WITH THE AFP

Early in my career as a federal agent in the Australian Federal Police, I was fortunate to be a part of the newly formed Computer Crime Team. It was the early 1990s, just as computers were becoming commonplace.

The AFP also works closely with state and territory police, and international policing agencies in the fight against cyber crime, and there are a range of STEM areas you can serve in.

I investigated cases across Australia, the United States, New Zealand and Hong Kong, and now work as a cyber crime analyst on some of the most harrowing cyber investigations to help make the internet a safer place for all.

BACHELOR OF ARTS
(CRIMINAL JUSTICE
ADMINISTRATION). RMIT

GRADUATE CERTIFICATE
(CYBERCRIME). AMERICAN
MILITARY UNIVERSITY

BACHELOR OF LAWS.
DEAKIN UNIVERSITY

FEDERAL AGENT
(FORMER). AFP

MASTER OF ARTS
(NATIONAL SECURITY)
(TERRORISM). AMERICAN
MILITARY UNIVERSITY

SENIOR CYBER
INVESTIGATOR. PRIVATE

WHERE DO AUSTRALIA'S SPIES WORK?

To the untrained eye, the kinds of government agencies where you might work as a cyber spy look a bit like a jumble of acronyms. Here's the lowdown on some of the main ones:

ADF

Australian Defence Force

Our military forces, including the Air Force, Navy and Army, undertaking military and humanitarian activities for the nation.

AFP

Australian Federal Police

The principal federal law enforcement agency of the Federal Government, investigating and protecting national security.

ASD

Australian Signals Directorate

Australia's military spy agency, which conducts cyber warfare and cyber defence activities.

ASIO

Australian Security Intelligence Organisation

Australia's version of the CIA! It protects us from espionage, sabotage, foreign interference, attacks on critical infrastructure and terrorism.

ASIS

Australian Secret Intelligence Service

Our foreign human intelligence service. Its job is to collect information through human contacts overseas to benefit Australia and its interests.

ONI

Office of National Intelligence

An intelligence agency solely accountable to the Prime Minister of Australia, with a primary duty to provide relevant intelligence.

Cool program alert!

The ADF Cyber Gap Program offers financial support, mentorship and training to cyber students

Want to kickstart your cyber spy career before you even graduate? One way is through the ADF's 12-month Cyber Gap Program, which allows students who are enrolled or already studying in a cyber-related field to gain skills, knowledge and mentoring. The program includes financial support to help cover the cost of the course and related expenses, and does not obligate participants to serve in the ADF.

Visit defencejobs.gov.au to find out more about cyber careers!

Could you crack this code?

To celebrate its 75th anniversary, the Australian Signals Directorate (ASD) released this special 50c coin, which includes several codes to crack – four layers of which were solved by a 14-year-old from Tasmania in just over an hour! Talk about teen spy skills!

