TERM 2, 2023

CAREERS WITH STEM™

MATHS+DATA

DOUBLE ISSUE
FLIP FOR CAREERS WITH ECONOMICS

GRADUATE DATA SCIENTIST

SUPPORTED BY

Commonwealth Bank

CAREERSWITHSTEM.COM

FINANCE + MINING + CREATIVITY + ENVIRONMENT + SOCIAL GOOD + ECONOMICS

Your maths career starts here

A QUT double degree in mathematics and business opens up a world of opportunities.

With access to practical learning and industry internships, Thomas felt confident that he had the knowledge and skills needed to be successful in the job market.

'The emphasis on this practical style of learning combined with the support for finding internships and other work experience was my favourite part of QUT.'

Today, Thomas is working as a Manager at Strategy&, which is part of the PwC network.

'I love my job because every day I come to work to solve problems, something my mathematics degree taught me to manage.'

Thomas Craddock
Mathematics and business double degree graduate

qut.edu.au/mathematics

the university for the real world QUT

THE FUTURE OF MATHS

Ever wondered what maths is for? An expert in artificial intelligence tells you why we need maths skills more than ever!

LUIZ PIZZATO
EXECUTIVE MANAGER AI LABS, COMMONWEALTH BANK

Have you ever been impressed with Spotify's song recommendations? Or Netflix's top picks for you?

Underneath all these recommendation engines is maths – the type I've made a career out of.

When I was at school I really enjoyed physics because I could see how it related to so much of our world. At around the same time I discovered video games and learnt about algorithms and basic programming – probably because I like tinkering with things. That's why I decided to study computer science: I really wanted to design computer games.

Along the path to my current job at the Commonwealth Bank, I was fortunate enough to win a scholarship to study artificial intelligence (AI) before many people knew what that meant. From there I got to design some really useful things, including the first algorithms used by dating websites, and those that answer questions in systems like Siri, Alexa and ChatGPT.

Today, I lead a team of people who look at emerging AI technologies and how they can be used to assist customers and make better data-driven decisions. Every day at work is really exciting.

DATA EVERYWHERE

With tools like ChatGPT getting a lot of attention, more people are realising what AI is capable of. AI needs a lot of data to work, but more than that, it needs people who understand how it works and how to use it safely.

Today, in almost every career, people use data to make decisions.

> "MATHS CAN HELP YOU SOLVE PROBLEMS THAT AFFECT PEOPLE EVERY DAY"

LAUREN TROMPP

Having maths skills to analyse and process data is crucial to solving everyday problems.

Our team has used data and AI to help protect customers from receiving messages of abuse via their banking platform and to rapidly identify and support customers who may be affected by natural disasters.

The more maths skills you have, the more careers you'll be able to choose from. You'll read about some of these in the pages of this magazine: the next generation of data scientists, analysts and tradespeople applying maths and data to everything from finance, to meteorology and machine building. I wish you all the best in your maths and data journey.

Luiz Pizzato
Executive Manager AI Labs,
Commonwealth Bank

BACHELOR OF COMPUTER SCIENCE, MASTER OF COMPUTER SCIENCE, BRAZIL >> PHD, MACQUARIE UNIVERSITY >> LECTURER, ACADEMIC AND CONSULTANT >> SENIOR DATA SCIENTIST, 1-PAGE >> SENIOR DATA SCIENTIST, COMMONWEALTH BANK >> HEAD OF DATA SCIENCE, ACCENTURE >> EXECUTIVE MANAGER AI LABS, COMMONWEALTH BANK

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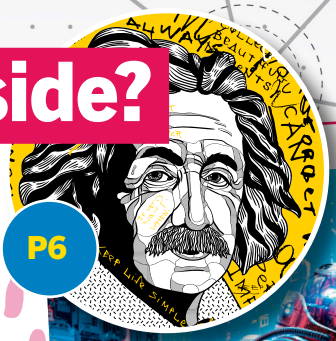
What's inside?

FLIP THE MAGAZINE OVER FOR CAREERS WITH ECONOMICS!



WHY MATHS+DATA?

Data skills are becoming increasingly important in all fields, as more and more organisations rely on data-driven decision making. Being able to collect, analyse and interpret data is key to understanding trends, identifying patterns and making informed decisions, as you'll see in this issue. And with the rise of artificial intelligence, the demand for people with strong data skills is only going to continue to grow.

SHUTTERSTOCK

STEM + X = 😊

Combine maths & data (STEM) with your passion (+ X) to discover your dream career...

Maths & Data + ...


(YOU)us
CAN USE MATHS TO MAKE SENSE OF THE WORLD
Did you know that maths is the language that makes sense of our data-driven world? Studying mathematics trains you to think clearly, develop analytical and investigative skills, follow complex reasoning and construct logical arguments – providing the foundations for a wide range of careers in exciting, dynamic and cutting-edge fields.
At Macquarie, studying maths as part of the Bachelor of Science, Bachelor of Information Technology or Bachelor of Medical Sciences prepares you for careers ranging from data science, analytics and astronomy to AI, IT, sustainability, climate science, conservation, media, marketing, e-commerce and more.
Learn more about how maths will help you make sense of the world at mq.edu.au/study/find-a-course
MACQUARIE University
SYDNEY·AUSTRALIA
CRICOS Provider 00002J | FSE5835

Maths myths busted!

Think you know what maths careers are all about? We're here to set some facts straight

Maths careers are sometimes thought of as boring and only for super smart people. But that's just not true! Maths is useful in many different careers and industries, and it's not all about being a mathlete.

Here are four maths myths that we're here to debunk:

01 You must be a genius to have a career in maths

Fact: While being good at maths is definitely helpful if you want a career in maths, you don't need to be the next Einstein. Many maths jobs involve using mathematical concepts and principles to solve real-world problems, and that can be done even if you're not a maths whiz. What's most important is that you're interested in maths and willing to learn.

02 Maths jobs are only found in traditional industries like engineering and finance

Fact: Maths jobs can be found in all kinds of industries, including marketing, retail and even video game design. If you have an interest in a particular field, it's worth exploring whether there are maths-related careers within that industry.

03 Maths careers are boring

Fact: Many maths careers involve solving challenging problems and working on cutting-edge projects, and that can be super fun and fulfilling. Plus, maths careers often come with good pay and job security, making them a great choice for those wanting a stable and rewarding career.

04 Maths careers are only for 'left-brained' people

Fact: It's a common myth that people who are good at maths are 'left brained' (logical and analytical) while those who are more creative and artistic are 'right brained'. But the truth is that everyone uses both sides of their brain, and maths careers can be just as creative and artistic as any other career. Maths can be used to create beautiful patterns and designs, and many maths careers involve using creative thinking to solve problems.

SHUTTERSTOCK

Australian Government

National Careers Institute

YOUR CAREER YOUR WAY

Your career can take a variety of twists and turns, steps and stages.

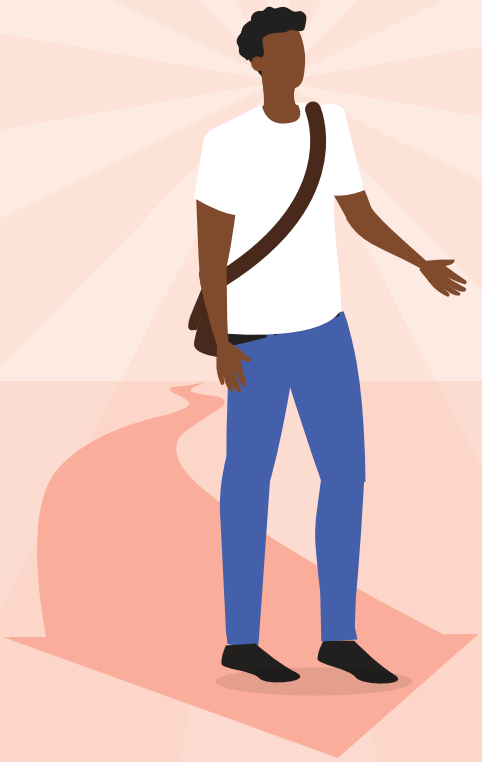
yourcareer.gov.au can help you make informed decisions about your learning, training and career development.

Australian Government

National Careers Institute

Know what you want to do when you finish school?

Got plans to do some study or training, start working, or take a gap year?



Download the
School Leavers Information Kit
for information about:

- study or training options to upskill
- financial support for further study
- how to nail a job interview
- and more!

Your Career

yourcareer.gov.au/schoolleaver

CAREERS BY THE NUMBERS

WONDERING IF A MATHS AND DATA PATH WILL LEAD YOU TO AN EXCITING CAREER WITH GOOD JOB SECURITY? THESE STATS SAY YES!

24%.

Of maths graduates go on to work in education and training. STEM educators are in high demand, so why not consider teaching high school maths?

23.2%.

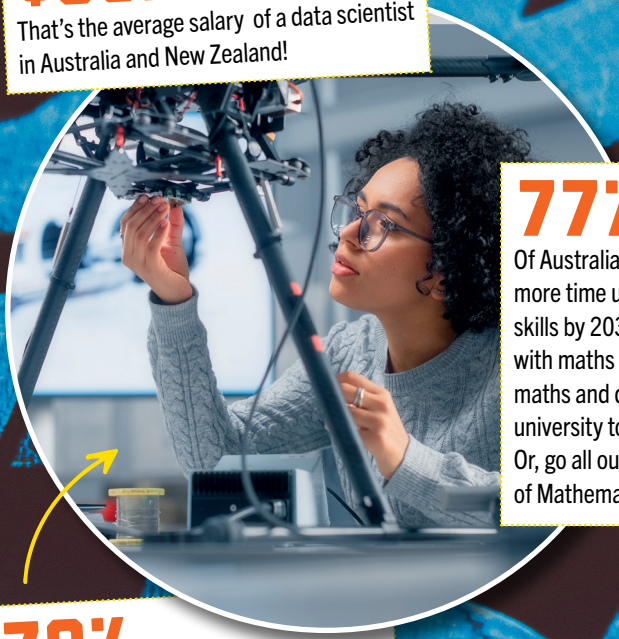
Is the projected job growth for data analyst roles by 2026. Data analysts collect and interpret data to solve problems and can work in a variety of industries – think business, medicine, crime and justice, and government.

14,600

New jobs for electricians will be created by 2026. If this *sparks* your interest, make sure your geometry, algebra, trigonometry and measurement skills are up to scratch.

$93K

That's the average salary of a data scientist in Australia and New Zealand!



77%.

Of Australian workers will spend more time using science and maths skills by 2030, it's predicted. Stick with maths in high school or choose maths and data electives at university to get ahead of the curve. Or, go all out and study a Bachelor of Mathematics or Data Science!

$85K

Is the typical salary of a statistician in Australia. These data pros analyse statistical info to provide insights and answer big questions. You'll find them working in sport, finance, education, psychology, marketing and more!

70%.

Of software engineer employers say that having strong maths skills (in areas such as arithmetic, algebra, geometry, calculus and statistics) is important for the job.

73.3%.

Of carpenters have a Certificate III or IV, proving that VET is a great place to gain practical skills that will have you succeeding in a hands-on maths gig!

#1

Is where registered nurses ranked on the 'Top 20 occupations in demand' list in 2022. They use arithmetic, fractions, ratios, unit conversions and percentages every day to help care for patients.

SHUTTERSTOCK

Want to be in demand? Stick with maths!

These are Australia's top 10 most in-demand jobs… and the maths they use

In 2022 the Australian Government released its 'skills priority list', in which it highlights jobs that are 'in demand' – that is, the number of job vacancies is higher than the number of people available to take them.

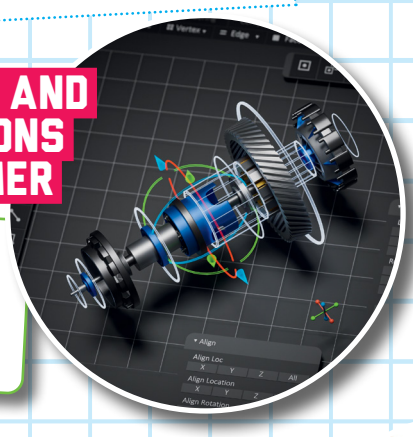
They're not all STEM gigs, but the one thing that many of them do have in common is numbers. The upshot? Maths and data skills add up if you want an in-demand job. – *Gemma Chilton*

1 REGISTERED NURSE

The maths: Basic maths (measurements, calculations)

How it's used: Calculating medication dosages

2 SOFTWARE AND APPLICATIONS PROGRAMMER



The maths: Algebra, logic, algorithms, data structures

How it's used: Designing and implementing software programs

3 AGED OR DISABLED CARER

The maths: Basic maths (measurements, calculations)

How it's used: Calculating medication dosages, measuring and recording vital signs

4 CONSTRUCTION MANAGER

The maths: Geometry, algebra, statistics, project management

How it's used: Calculating the resources needed for construction projects, analysing data to track progress and identify issues

5 CHILD CARER

The maths: Basic maths (measurements, calculations)

How it's used: Calculating and mixing formula for infants, measuring and administering medication

6 MOTOR MECHANIC

The maths: Algebra, geometry, basic physics

How it's used: Calculating the dimensions and tolerances of engine parts, analysing data from diagnostic tests

7 RETAIL MANAGER

The maths: Basic maths (calculations, percentages), data analysis

How it's used: Calculating profit margins, analysing sales data to identify trends and make business decisions

8 CHEF

The maths: Basic maths (measurements, calculations)

How it's used: Measuring and mixing ingredients, calculating food costs

9 ICT BUSINESS AND SYSTEMS ANALYST

The maths: Algebra, logic, algorithms, data structures, data analysis

How it's used: Analysing and interpreting data to inform business decisions, designing and implementing data systems

10 METAL FITTER AND MACHINIST

The maths: Geometry, algebra, basic physics

How it's used: Calculating the dimensions and tolerances of metal parts, analysing data from diagnostic tests

SHUTTERSTOCK

Kicking career goals with maths

Meet two superstars who are using their maths skills to change people's lives

#1 ENTREPRENEUR

MIKAELA JADE
FOUNDER, INDIGITAL

MASTER OF APPLIED CYBERNETICS, ANU
FOUNDER AND CEO, INDIGITAL
PARK RANGER
BACHELOR OF ENVIRONMENTAL BIOLOGY (COASTAL AND MARINE SYSTEMS), UTS

In her business teaching digital skills and using augmented reality to tell stories of Indigenous cultural areas in 3D, Mikaela Jade uses maths and data every day. But she wasn't always a fan.

"At school I didn't like maths," she says. "I failed maths multiple times at university." Mikaela persevered and says things turned around when she started to use maths as a tool to better understand the natural world and, in particular, recognise patterns.

Through learning the Fibonacci sequence, known as 'nature's code' because it's seen in how tree branches and shells grow, Mikaela found a new way to explain maths to those new to it. "We definitely need more brains thinking about maths," she says.

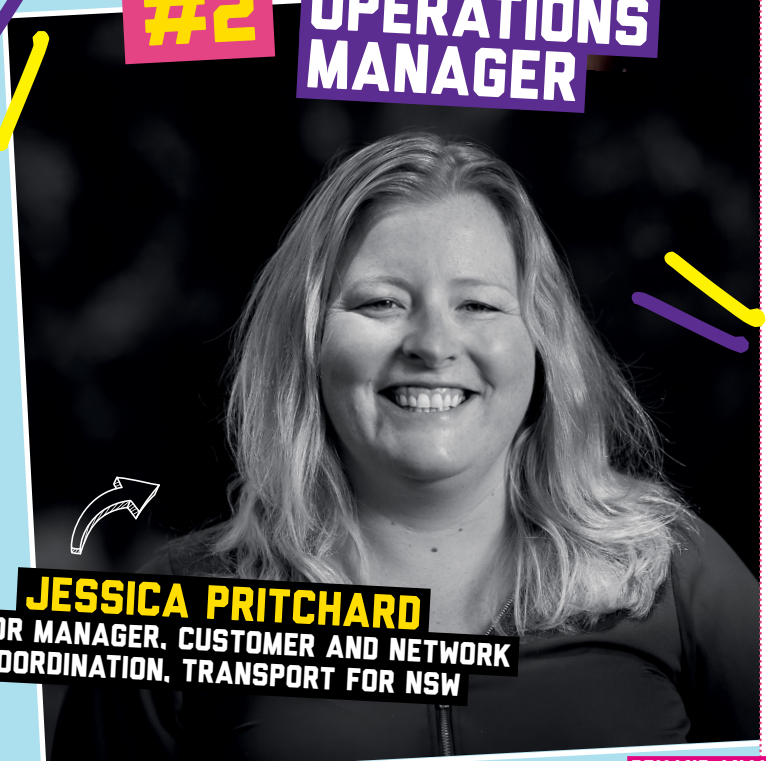
Today, maths helps Mikaela understand the technology she works with so she can do a better job providing what people need.

"So, if I understand how my phone camera is using algorithms… I can do a better job because I know what the computer needs."

And she's kicking goals with her work, even addressing the UN in New York!

INSPIRED, MUCH? CHECK OUT VR EXPERIENCES ON THE EVERYDAY MATHS HUB: BIT.LY/MATHSVR

#2 OPERATIONS MANAGER



JESSICA PRITCHARD
SENIOR MANAGER, CUSTOMER AND NETWORK COORDINATION, TRANSPORT FOR NSW

Jessica Pritchard has a lot to juggle, but she credits her grounding in maths and logic with getting her through the toughest days.

Initially, Jessica had trouble deciding what to study after finishing high school in Newcastle.

"I was a bit lost as to what I actually wanted to do. I did a double degree with a Bachelor of Mathematics and a Bachelor of Arts because I enjoyed history and thought that'd be a nice mix."

After working in market research for some community groups, Jessica realised maths could impact people's lives.

"It wasn't just the maths and statistics, it was what you could do with that information," she says.

Today, Jessica has a full-on job as an operations manager at Transport for NSW, the part of the government that looks after all the state's roads. "Every day is different," she says.

During the floods in Lismore, Jessica was working out how and when they could get trucks (and food supplies) back on the roads. At other times, she analyses traffic data to help prevent accidents.

Jessica says that logic, a skill at the heart of maths, is important for all these tasks. "In almost every role, employers want to see that you're logical and that you can think."

And even if you don't plan to go to university, she says Year 12 maths is important. "There is so much now that is heavily data driven. That's our world." – *Charis Palmer*

BACHELOR OF ARTS (POLITICS) / BACHELOR OF MATHEMATICS (STATISTICS), UNI OF NEWCASTLE >> DEMAND ANALYST AND OPERATIONS PLANNING COORDINATOR, HUNTER VALLEY COAL CHAIN COORDINATOR >> SENIOR MANAGER, CUSTOMER AND NETWORK COORDINATION, TRANSPORT FOR NSW

WHAT ELSE IN OUR WORLD RELIES ON MATHS? FIND OUT ON THE EVERYDAY MATHS HUB BIT.LY/MATHSHUB

HEAVY METAL

LACHLAN BUTLER CREDITS HIGH SCHOOL MATHS WITH SETTING HIM UP FOR A SUCCESSFUL TRADE CAREER

LACHLAN BUTLER
METAL FABRICATOR

- 2022 AUSTRALIAN APPRENTICE OF THE YEAR FINALIST
- NSW APPRENTICE OF THE YEAR 2022
- METAL FABRICATOR, BOSS AGRICULTURE
- METAL FABRICATOR APPRENTICE, BOSS AGRICULTURE
- CERTIFICATE III IN ENGINEERING (FABRICATION TRADE)

SHUTTERSTOCK / SUPPLIED

Growing up on a farm in regional NSW gave Lachlan a love for anything hands-on and practical – so getting skilled up in a trade was a no-brainer.

After high school, he enrolled in a Certificate III in Engineering (Fabrication Trade), during which tinkering with machines was just part of the coursework.

And even though heading to uni was never on his radar, his decision to stick with maths at high school is one he's still grateful for today.

"It helps heaps with my job," he says. "I'm always measuring and figuring out median distances on all the machines I make."

Man of steel

Lachlan scored his current gig at BOSS Agriculture after proving himself invaluable during his apprenticeship there. Now, he spends his weekdays working with steel to produce agricultural machinery such as air seeders for farms, which requires him to be practical, mathematical and creative.

"The idea of both creativity and problem-solving excites me," he says of his role. "I get to experience such a variety of different work in such a positive workplace!"

Lachlan's diverse skill set, combined with an infectious love of his work, landed him the title of 2022 New South Wales Apprentice of the Year. Lachlan was also the 2022 Australian Apprentice of the Year finalist at the Australian Training Awards.

Apart from being a big believer in not dropping high school maths ("I'm so glad I didn't!"), he's also an advocate for VET pathways – particularly in regional areas where there's huge industry demand for apprentices. "Take class seriously in high school," he says. "You want to enjoy it, but if you knuckle down and study hard, you can go anywhere in life!"

Yep, high school maths + an apprenticeship = winning career combination. – *Cassie Steel*

"I GET TO EXPERIENCE A VARIETY OF WORK IN SUCH A POSITIVE WORKPLACE!"

THE FUTURE OF WORK EXPERIENCE

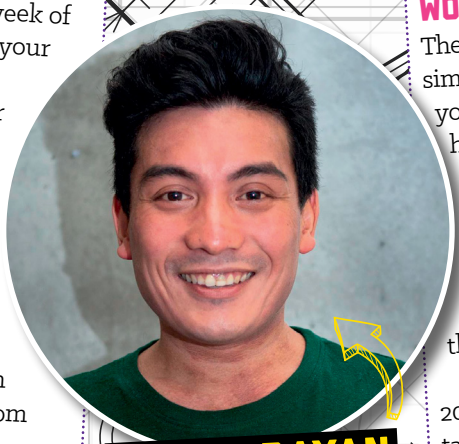
Work experience 2.0 is here –and it's even more high-tech, accessible and enriching

If you're in Year 10 – or about to be – chances are that organising a week of work experience is up there on your already epic to-do list. And if you don't live in a major city? Consider it double the mission – with inspiring and willing STEM employers few and far between.

Enter The Tech Explorer Program, an initiative championed by job simulation company Forage and Commonwealth Bank (CBA) which makes WEFH (work experience from home) a real and very welcome alternative to traditional placements.

"We realised that there was a win-win model that could have a huge impact on the confidence of students, while also benefitting companies," explains co-founder Pasha Rayan.

"And because our mission has always been to reach diverse students from as many different backgrounds as possible, we really wanted it to be open access and free so there were no barriers at all into these really cool careers."



PASHA RAYAN
CO-FOUNDER, FORAGE

WORKING 9ISH TO 5ISH

The Tech Explorer internships are set up similarly to the old-school model, in that you gain hands-on experience observing how a company such as CBA runs, and tackle real-world tasks that would be required in the role.

The major difference? You can do it in your own time, log in from anywhere and still access what you've learnt once the week has wrapped.

And with tech careers making up 10 of 2023's most in-demand roles, CBA's tailored modules in software engineering, data science and cyber security will set you up for the future – the perfect fit for high school students looking to deep dive into highly specialised and employable skill sets.

"It's given me practical and realistic expectations as to what it would really be like to work there," says one student.

"WE REALLY WANTED IT TO BE OPEN ACCESS AND FREE"

THE EVOLUTION OF WORK EXPERIENCE

THEN	NOW
Hunt for a complying employer	Click a button and you're in
Stress about timing	Flexibility to log in anytime
Travel into workplace	Ability to complete from home
Spend time trying to memorise everything you learnt	Access to materials after work experience is over
Get a participation certificate	Add the qualification to your LinkedIn or CV

SHUTTERSTOCK

ACCESSIBILITY PERKS

Keen to sign up and see what it's like to work in tech at a bank? Chat to your careers advisor and express your interest online. One of the major advantages of virtual work experience and internships is that more than one or two students can be hosted at a time, which means less FOMO as placements start to fill up – the more, the merrier. – *Cassie Steel*

WEFH* TOOLKIT

- ✔ GOOD WI-FI
- ✔ A COMFY SPACE
- ✔ GREAT ATTITUDE
- ✔ A WORKING CAMERA AND MICROPHONE
- ✔ SELF DISCIPLINE
- ✔ SUPPORTIVE CAREERS ADVISOR/TEACHER
- ✔ ALL THE SNACKS

*Work experience from home (or school)

Work flexibly

KEEN TO GET INTO TECH? THANKS TO CBA'S TECH HUBS, REGIONAL APPLICANTS ARE URGED TO APPLY

Gone are the days when tech jobs were exclusively reserved for graduates in capital cities. Thanks to CBA's tech hubs and flexible work options, students in remote and regional areas now have the same access to work experience, internships and networking opportunities as their city counterparts – which means more exposure to diverse STEM pathways and the confidence to apply for future-focused careers.

"The most exciting thing is that students can study locally in their home states and then go straight into a great technology career," says CBA's senior manager of tech hubs Sabina Streatfeild. "We're helping people build brighter futures without having to move away from their friends and family."

Geared toward supporting the expansion of Australia's IT community and skills, tech hub-endorsed gigs include a range of maths and data placements – think: cloud computing, data analytics and software engineering.

And, yep, you can bank on your high school STEM skills helping you out.

Mission possible

With tech careers making up Australia's most in-demand occupations – over 1.2 million people are expected to be working in the sector by 2030 – it's no surprise that getting fluent in digital everything is a seriously smart career move.

And the fact that fresh tech is constantly evolving means employers are seeking out diverse teams of experts – skilled in everything from machine learning to the metaverse – to help navigate the inevitable changes.

Bank on it

CBA's tech hubs are a reaction to industry demand – making next-gen careers accessible to all through graduate programs and integrated work placements.

A win-win for both employers and fresh grads, CBA has teamed up with major unis and TAFEs to provide on-the-job placements to regional grads who otherwise may have missed out – future engineers, cyber specialists and data scientists.

And, with the Tech Council's goal of making 170,000 fresh tech hires by 2030 – and upskilling or reskilling 300,000 more – it's safe to say there's no shortage of demand. – *Cassie Steel*

NOW HIRING

So, what teched-up maths jobs are going at CBA? Surprisingly more than you'd think!

- CYBER SECURITY SPECIALISTS
- DIGITAL PRODUCT DESIGNERS
- SOFTWARE ENGINEERS
- SOFTWARE DEVELOPERS
- MACHINE LEARNING ENGINEERS
- PEN TESTERS

APPLY HERE For more info on CBA's tech hubs head to **CareerswithSTEM.com.au**

THE DATA OF DOLLARS

Maths and money go hand in hand. Here's the lowdown on the best careers in finance

Over half a million people work in Australia's financial and insurance services industry, and that number is growing. Many finance jobs don't even require you to have a degree – about a quarter of the workforce have a VET qualification and almost a third don't have any post-school qualifications at all! In fact, about 40,000 of those employed in the industry are bank workers, which is a job you can go for straight out of school.

Skills to pay the bills

Having a head for numbers is critical to any career in the finance industry, but you'll need a degree for the top jobs. Traditional study pathways include accounting, maths, commerce, business, finance and actuarial studies – but you can supercharge your specialisation if you add data.

Combining a finance-focused degree with a second qualification in data science, IT or statistics can help boost your future career options and earning potential. Skills in artificial intelligence, machine learning, programming and data analytics are also in high demand, so keep an eye out for those keywords when you're looking at courses!

What's that job?

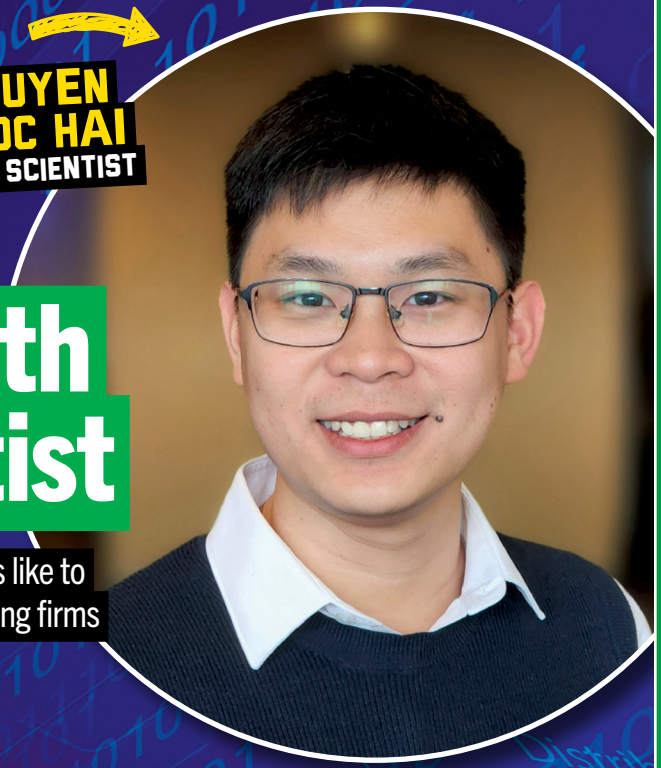
Lots of jobs in finance include the word 'analyst' – here's what they all do:

- **Data analysts** design and compile financial reports to help their organisation make good business decisions.
- **Data scientists** use programming skills to build the infrastructure behind those reports.
- **Business analysts** make recommendations to management based on the reports.
- **Financial analysts** help clients choose the best investment strategies.
- **Quantitative analysts** analyse big financial systems like the stock market.
- **Risk analysts** assess loan and insurance applications for individuals and businesses.
- **Actuaries** work with insurance companies to analyse things like car accident statistics, and weather and health data to determine the correct premiums to charge.

The brilliant thing about finance is that there are jobs in just about every sector imaginable. Banks are just the beginning – accounting and consulting firms, insurance agencies, mortgage lenders and superannuation funds are all potential employers too. Plus, every big business, organisation and government department has a finance team. So, whatever your passion, there's a finance job waiting for you. It could even take you around the world!

SHUTTERSTOCK

NGUYEN NGOC HAI
DATA SCIENTIST



5 minutes with a data scientist

Nguyen Ngoc Hai spills the beans on what it's like to work in finance at one of the big four accounting firms

Hai grew up in Vietnam and completed his degree in India and Australia. When he's not dreaming up ideas for startups, he's cooking up a storm or practicing calligraphy.

WHAT DID YOU STUDY AT UNI?

When I was a kid, I wanted to be a businessman and make lots of money. I did a year of business studies at uni in Vietnam, but I realised it was something you could learn from experience. I did some research on data science and decided to pivot to that.

HAVE YOU ALWAYS BEEN GOOD AT MATHS AND CODING?

In high school, I specialised in social sciences like literature, history and geography. I got decent marks in maths and physics, but I wasn't outstanding.

I actually didn't have much of a coding background before my degree. I spent an intense month teaching myself Python before classes started. We learnt an ancient programming language called Pascal at school in Vietnam and that helped me work out the logic.

> "I SPENT AN INTENSE MONTH TEACHING MYSELF PYTHON BEFORE CLASSES STARTED"

HOW DID YOU END UP STUDYING IN INDIA?

I was supposed to go straight to Sydney but the course was cancelled at the last minute. My options were to wait a year or start the course in Mumbai. I joined them in the middle of the second semester and finished my first year in just four months! My journey has been a bit of a wild ride.

WHAT DO YOU DO AT KPMG?

My first job was bridging the gap between two teams: the finance team, which understands data within the business, and the market intelligence team, which understands our competitors. I helped bring the data from both sides together to make something bigger.

My current role is mainly reporting and analysing data, but I'd like to get back into the data science side of things.

WHAT DO YOU LIKE TO DO OUTSIDE OF WORK?

I like to have a good work-life balance. I enjoy getting outdoors and away from the computer screen. I'm still new to Australia, so I like to explore and hang out with friends. I'm a good cook, and sometimes I do calligraphy. I was the calligraphy champion at primary school for five consecutive years!

BACHELOR OF DATA SCIENCE, S P JAIN SCHOOL OF GLOBAL MANAGEMENT (MUMBAI + SYDNEY) → DATA SCIENCE INTERN, VPBANK (VIETNAM) → DATA SCIENCE INTERN, FAETHM AI → SENIOR DATA ANALYST / DATA SCIENTIST, KPMG ← FINANCE + MARKET INSIGHTS DATA ANALYST, KPMG ← BUSINESS SYSTEMS ENGINEER, NEXON ASIA PACIFIC ← AWS EDUCATE AMBASSADOR, AMAZON WEB SERVICES

SHUTTERSTOCK

MATHS + DATA + FINANCE + STUDY

UNDERGRAD

Bachelor of **Data Analytics**

Bachelor of **Commerce**

Bachelor of **Information Technology**

Bachelor of **Applied Data Science**

Bachelor of **Business Analytics**

Bachelor of **Data Science** / Bachelor of **Property Economics**

VET COURSES

Certificate IV in **Business (Big Data)**

Diploma of **Financial Services**

MATHS + DATA + FINANCE + JOBS

Data analyst
$56K–$103K

Data scientist
$65K–$128K

Financial analyst
$57K–$102K

Quantitative analyst
$60K–$161K

Risk analyst
$62K–$101K

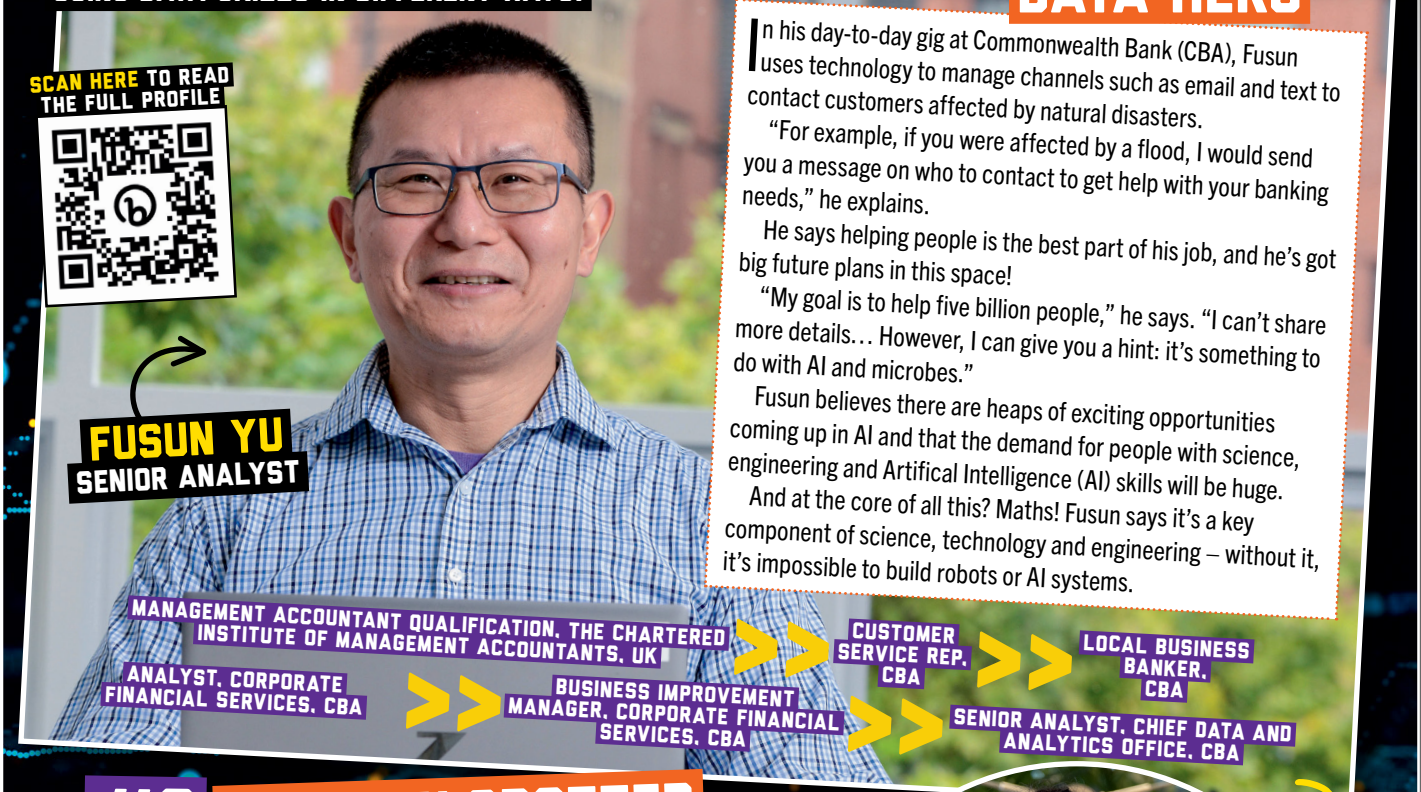
Actuary
$70K–$171K

Salary info according to payscale.com

BANKING ON DATA

MEET THREE COMMONWEALTH BANK EMPLOYEES USING DATA SKILLS IN DIFFERENT WAYS!

#1 DATA HERO



SCAN HERE TO READ THE FULL PROFILE

FUSUN YU
SENIOR ANALYST

In his day-to-day gig at Commonwealth Bank (CBA), Fusun uses technology to manage channels such as email and text to contact customers affected by natural disasters.

"For example, if you were affected by a flood, I would send you a message on who to contact to get help with your banking needs," he explains.

He says helping people is the best part of his job, and he's got big future plans in this space!

"My goal is to help five billion people," he says. "I can't share more details… However, I can give you a hint: it's something to do with AI and microbes."

Fusun believes there are heaps of exciting opportunities coming up in AI and that the demand for people with science, engineering and Artifical Intelligence (AI) skills will be huge.

And at the core of all this? Maths! Fusun says it's a key component of science, technology and engineering – without it, it's impossible to build robots or AI systems.

MANAGEMENT ACCOUNTANT QUALIFICATION, THE CHARTERED INSTITUTE OF MANAGEMENT ACCOUNTANTS, UK
ANALYST, CORPORATE FINANCIAL SERVICES, CBA
BUSINESS IMPROVEMENT MANAGER, CORPORATE FINANCIAL SERVICES, CBA
CUSTOMER SERVICE REP, CBA
LOCAL BUSINESS BANKER, CBA
SENIOR ANALYST, CHIEF DATA AND ANALYTICS OFFICE, CBA

#2 PATTERN SPOTTER

Asli's days at Commonwealth Bank involve data analysis and visualisation, data processing, data modelling and research.

"I find patterns in data and find insights," she explains. "It's interesting because when there's too much data we miss all the valuable detail and get lost in it. Bringing insight helps people understand what's going on."

If you're keen on getting into data science, Asli believes you'll be in demand and could work in all kinds of industries and areas!

"The importance of data insights and prediction has been recognised and almost all companies are now seeking data scientists."

She also thinks it's important to get support from teaching staff, parents and others throughout your STEM study path, and to have patience.

ASLI YORUK
DATA SCIENTIST

BACHELOR OF COMPUTER SCIENCE, RMIT
MASTER OF BIOINFORMATICS, UQ
ASSOCIATE DATA SCIENTIST, DXC TECHNOLOGY
LEAD MENTOR, SHE CODES AUSTRALIA
DATA SCIENTIST, CBA

#3 AMAZING AUTOMATOR

BILAL TAKACH
TECHNOLOGY GRADUATE

Bilal writes code to automate manual tasks for Commonwealth Bank, saving hours each month with the press of a button.

"The cool thing about my job is that I get to learn about all the parts and teams of the bank," he says. "This way I have a view of how teams plan their success and keep track of how they're performing. This gives me a decent understanding of what we're looking out for, which metrics are important, and which demonstrate the team's overall performance." He also thinks it's awesome that his team gets to present data and report to high-level managers and even the CEO!

Bilal believes lots of exciting areas are popping up in data science, with new jobs being created as a result. "Specifically, automation is becoming more popular as data science improves, so that will emerge as well," he adds.

BACHELOR OF ENGINEERING (DATA SCIENCE ENGINEERING) (HONOURS) / DIPLOMA IN PROFESSIONAL ENGINEERING PRACTICE, UTS
INTERN, ONEWIFI AUSTRALIA
INTERN, BENEVOLENCE FINANCIAL GROUP
TECHNOLOGY GRADUATE, CBA
ANALYST REPORTING + VISUALISATION, CBA

BRENTON EDWARDS / BEN ASHMOLE / LAUREN TROMPP / SHUTTERSTOCK

KANU AGARWAL
DATA SCIENTIST

FROM CORAL TO CREDIT CARDS

Data scientist Kanu Agarwal caught the data bug at uni and has never looked back

SHUTTERSTOCK

When Kanu was in Year 12, choosing a degree was a process of elimination.

"I looked through the course catalogues and started crossing out the ones I didn't want to do," she says. "I was like, 'Bachelor of Arts? Nope, absolutely not'."

A lifelong "nerdy kid", Kanu knew she wanted to study something maths-related. But she also knew the advice she kept hearing wasn't quite right for her.

"Everyone tells you that if you're interested in maths and science, you should study engineering," she says. "I wanted to study something a bit broader."

Kanu decided on a double degree in maths and computer science at QUT in Brisbane. She also took advantage of some of the awesome STEM-related extracurricular activities; she was president of Women in Technology at QUT for one year before starting a new club called QUT Women in Maths.

"It's important to think about life outside of your studies and work, and do extracurriculars and other things that make you happy," Kanu says.

An internship at CSIRO spawned an interest in the Great Barrier Reef, and Kanu spent her honours year working on a data project tackling the problem of crown-of-thorns starfish.

Outbreaks of the starfish cause irreparable damage to coral, but there are limited resources to control them. "I was using models to figure out, 'okay, I've got a limited budget, where should I go to control starfish populations to preserve the largest amount of coral?' It becomes a mathematical optimisation problem."

Kanu never thought she'd end up working in finance, but as a Westpac Young Technologists Scholar she knew a lot about the culture there. She also knew she wanted to focus on data, and Westpac's graduate program was one of the few with a dedicated data stream.

Now, Kanu uses data to help catch credit card fraudsters instead of coral-eating critters.

"I'm a big believer in just doing what you want to do," she says. "If you're interested in something, just study it. Everything will work itself out later."

– *Chloe Walker*

"IF YOU'RE INTERESTED IN SOMETHING, JUST STUDY IT. EVERYTHING WILL WORK OUT"

BACHELOR OF MATHEMATICS (APPLIED AND COMPUTATIONAL MATHS) (HONOURS) / BACHELOR OF INFORMATION TECHNOLOGY (COMPUTER SCIENCE), QUT >> INTERN, CSIRO'S DATA61

RESEARCH ASSISTANT, QUT SCHOOL OF MATHEMATICAL SCIENCES >> PRESIDENT, WOMEN IN TECHNOLOGY AT QUT + QUT WOMEN IN MATHS >> DATA GRADUATE, WESTPAC >> ASSOCIATE DATA SCIENTIST, WESTPAC

Putting data to work

Miners and builders are awash with data, meaning they're on the hunt for talented data science graduates to make sense of it all

Mining and construction are two of Australia's biggest industries. A lot of data and maths are involved in them, and skilled grads are needed!

From drone surveys to sensor data, buildings and mines are getting more intelligent all the time. This is producing a lot of data that needs to be analysed to keep workers and residents safe, and to help anticipate and solve potential problems before they occur. Data and maths have other applications too, such as in virtual reality models. Whether you love maths and modelling or are deeply into data, the opportunities will likely only keep increasing.

– Nadine Cranenburgh

TACKLING CLIMATE CHANGE WITH MATHS

A very cool PhD project at Western Sydney University is using maths and blockchain technology (the tech behind bitcoin) to estimate the carbon emissions of buildings. Tracking emissions from power and building operations is straightforward, but it's trickier to calculate the carbon from materials and building construction. This project sources accurate data from manufacturers to solve that problem. The blockchain system also makes sure the data stays secure. It stores many copies of the data, so if one copy is corrupted or changed, it can be fixed straight away.

GRADUATE OPPORTUNITIES

Two major mining companies are on the hunt for talented data science students to fill graduate and internship roles.

RIO TINTO'S

two-year grad program offers individual coaching, game-based leadership training, inspirational talks and practical placements. There are also holiday internship opportunities that could give you a foot in the door!

BHP'S

two-year program includes mentoring and buddy systems to get your career off to a great start. You'll rotate through two to four roles to get a feel for what you want to do. And, if you're keen to get in early, BHP offers internships to students in their second to penultimate year of uni.

SUPPLIED / SHUTTERSTOCK

DATA+CONSTRUCTION

WE ASKED PROFESSOR SRINATH PERERA FROM THE CENTRE FOR SMART MODERN CONSTRUCTION AT WESTERN SYDNEY UNIVERSITY ABOUT OPPORTUNITIES FOR DATA SCIENCE GRADS

PROFESSOR SRINATH PERERA
DIRECTOR, CENTRE FOR SMART MODERN CONSTRUCTION

> CONSTRUCTION COMPANIES WILL EMPLOY MORE MATHS AND DATA SCIENCE GRADS IN THE FUTURE"

Where does construction data come from?

More and more construction processes and activities are going digital and tapping into technology. For example, drones are now used to survey construction sites and buildings. We're also starting to embed sensors in concrete slabs and columns to monitor movement, temperature and other properties, and we then share that data over the internet of things (IoT).

How much data is there?

Sensors generate enormous amounts of data. We call this 'big data'. This data needs to be analysed so we can predict building faults and maintenance ahead of time. We can also use data analysis to create augmented reality overlays with 'X-ray vision', which can show maintainers where electrical cables and pipes are located.

What opportunities are there for maths and data science grads?

A lot of construction companies will employ more maths and data science grads in the future to gain meaningful insights from the growing amount of data being produced. At the moment, we don't have enough skilled workers to analyse all the data, so there will be a lot of opportunities for data science grads.

Crunching the numbers

Have you ever wondered who keeps multimillion dollar construction projects on track? Quantity surveyors are the accountants of the construction industry. They are the brains behind budgets – from the start of the project right through to the finishing touches. Quantity surveyors are in high demand and come to work in Australia from all over the world.

START YOUR CAREER HERE

MATHS+DATA + MINING + CONSTRUCTION + STUDY

Bachelor of **Construction Management (Quantity Surveying)**, Western Sydney University

Certificate IV in **Business (Big Data)**, Swinburne Open Education

Bachelor of **Data Science** / Bachelor of **Mathematics**, University of Newcastle

MATHS+DATA + MINING + CONSTRUCTION + JOBS

Quantity surveyor $53K–$112K

Graduate mining data analyst $56K–$122K

Data visualisation analyst $54K–$90K

Data analyst $56K–$103K

Salaries according to payscale.com, australianminingcareers.com.au

FROM MINING TO BANKS AND BEYOND

Maths and data science have led ECU grads Kira Cooper and Luke Bacich down very different paths

Kira and Luke have both had very interesting (and unique!) career journeys.

When Kira left school, she wasn't sure what to do next. She started studying business and finance, but decided it wasn't for her.

Ten years later, Kira returned to study maths and data science at Edith Cowan University. During her studies, she won an award for sharing her passion for STEM with high school students through the uni's outreach program.

"I could show them that you can do what you enjoy and still find employment," she says.

Now, Kira is in BHP's grad program, working in the mining analytics team. Her highlight has been traveling to Singapore for a graduate hackathon.

Luke started out as a boilermaker fabricating equipment for mining companies, but he too wanted to see where maths could take him.

"I went to uni and it all fell into place," he says.

After graduating, Luke was accepted into Bankwest's grad program before moving into other roles, using his data and maths skills to supercharge marketing campaigns and build models for responsible money lending.

When Luke's Bankwest manager moved to the Water Corporation WA, he recruited Luke to help protect customers from data leaks.

Both Kira and Luke say that combining maths and data science gave them a good mix of critical thinking, problem-solving and practical skills. And as we find new ways to use data, opportunities are on the rise in mining and beyond. – *Nadine Cranenburgh*

APPRENTICE BOILERMAKER, AERISON >> BACHELOR OF SCIENCE (APPLIED MATHEMATICS AND DATA SCIENCE), EDITH COWAN UNIVERSITY >> GRADUATE, BANKWEST

DATA ENGINEER, BANKWEST >> ANALYTICS AND MODELLING MANAGER, BANKWEST >> INFORMATION MANAGEMENT ANALYST, WATER CORPORATION WA

AUSTRALIA
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EDITH COWAN UNIVERSITY

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When you choose to study Data Science at ECU, you learn to decode large amounts of data into useful information that can help solve real-world problems. Data science is a significant area of growth, providing employment opportunities in Australia and around the world. Our strong industry links provide students with the most up-to-date information and important networking and internship opportunities, while our flexible study options allow you to fit study around your life.

We offer a range of data science courses including:

- Bachelor of Science (Data Science Major)
- Graduate Certificate in Data Science
- Master of Data Science
- Master of Bioinformatics

For more information
ECU.EDU.AU/SCIENCE

Creative thinkers made here.

STATISTICALLY SPEAKING

ANGUS YALLOP STRUGGLED WITH MATHS IN HIGH SCHOOL – BUT HE KEPT AT IT AND NOW GETS PAID TO CRUNCH NUMBERS

In high school, Angus and maths weren't really compatible. "I struggled, but I'm so glad I stuck with it," he says. "I ventured into statistics during the ecology part of my degree and then taught myself to code."

Angus kickstarted his STEM pathway at the University of Adelaide with a Bachelor of Arts, majoring in Anthropology and a Bachelor of Science, majoring in Ecology. Maths underpinned many of his ecology units, and he gradually fell in love with statistics and numbers.

"I admired the value it had in making decisions," Angus explains. "I loved figuring out what was happening with the data – and doing something with that information!"

DATA FOR DAYS

Following graduation, Angus was offered a gig at the Australian Bureau of Statistics – an achievement he credits to some of the real-world projects he worked on during his final year of university.

"My job demands a bit of everything: computer science, statistics and geography," he says. And the biggest perk? Using data to contribute to the wider public good.

Currently, he's using census data from 2021 to rank areas according to measures of relative advantage and disadvantage, to help pinpoint where grant funding should go.

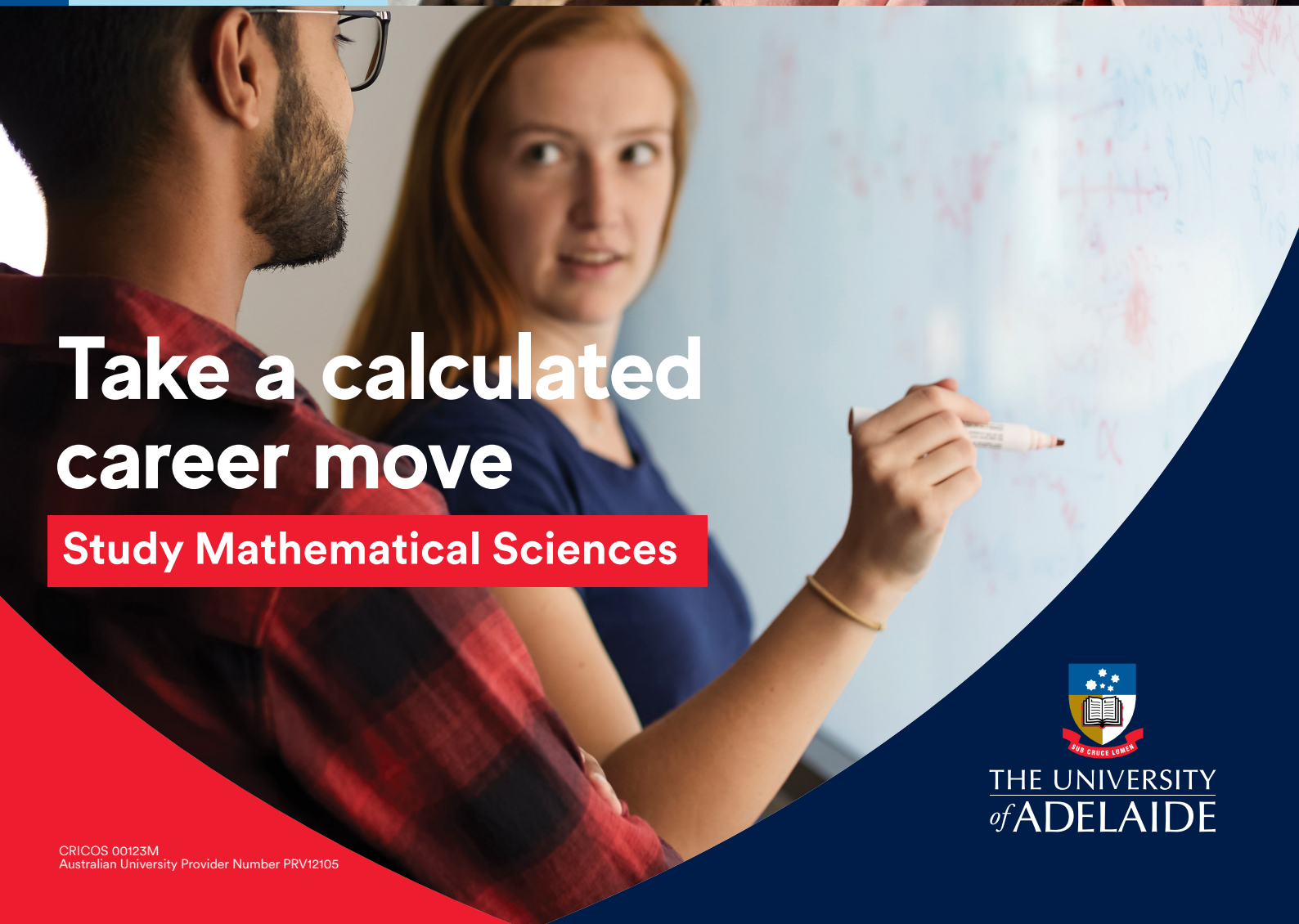
STEM + X

Angus stresses that staying curious and being excited by numbers are both key to working in data science. He also believes that unlikely subject pairings are where it's at.

"Everyone should study some humanities alongside STEM subjects," he says. "It will help you develop critical thinking and writing skills, and challenge and broaden your worldview." – *Cassie Steel*

LUCY O'CONNELL-DOHERTY

BACHELOR OF ARTS/ BACHELOR OF SCIENCE, UNIVERSITY OF ADELAIDE >> STUDY OVERSEAS ADMINISTRATOR, UNIVERSITY OF ADELAIDE >> DATA SCIENTIST, AUSTRALIAN BUREAU OF STATISTICS >> GEOSPATIAL SPECIALIST, AUSTRALIAN BUREAU OF STATISTICS



Take a calculated career move

Study Mathematical Sciences

THE UNIVERSITY of ADELAIDE

CRICOS 00123M
Australian University Provider Number PRV12105

STEM+X

Wondering what your future career combining maths and data with creativity might look like? Here are 5 X-amples to get you inspired!

Newsflash: it's a total myth that people are either logical or creative. We're never one or the other – and combining both traits can lead to a really cool career path. For example, data scientists and game designers use maths, stats and creativity to find new ways to solve problems. Architects and engineers use maths in their designs, while also using their creativity to make them functional and beautiful. So don't be afraid to let your creative side shine if you're interested in a career in maths and data! – *Gemma Chilton*

1 GAME DESIGNER

MATHS+DATA
Statistical modelling, probability, algorithms

+

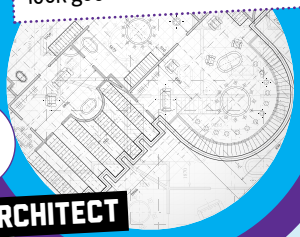
CREATIVITY
Designing gameplay, art and storylines that engage players

2 ARCHITECT

MATHS+DATA
Geometry, spatial reasoning, trigonometry

+

CREATIVITY
Designing buildings that both look good and are functional



3 ENGINEER

MATHS+DATA
Calculus, physics, mechanics

+

CREATIVITY
Designing new products and finding innovative solutions to problems

4 FASHION DESIGNER

MATHS+DATA
Measurements, geometry, statistics

+

CREATIVITY
Designing new fashion trends and styles that appeal to customers

5 MUSIC PRODUCER

MATHS+DATA
Sound waves, frequencies, rhythms, scales

+

CREATIVITY
Creatively composing, mixing and producing music that resonates with the listener

SHUTTERSTOCK

MUSIC MATTERS

JEREMY STODDARD IS MAD ABOUT MATHS AND MUSIC. WHICH MAKES HIS JOB AT DOLBY THE PERFECT FIT

Jeremy's favourite subjects at school were maths and physics, so he studied engineering at uni and followed that up with a PhD.

Jeremy is also massively into music though, so when a fellow grad landed a job at audio software company Dolby Laboratories, Jeremy applied too. He now has a seriously cool-sounding gig as a senior research engineer in Dolby's sound technology group.

A lot of Jeremy's work relates to the company's premier audio format, Dolby Atmos, which is tech that makes it feel as if the sound in music or movies is all around you! Jeremy says it takes "a bunch of fancy maths" to make that happen, including some foundational topics you may already be learning at school, such as calculus. – *Gemma Chilton*

START YOUR CAREER HERE

MATHS+DATA + CREATIVITY + STUDY

VET

Certificate IV in **Information Technology (Gaming Development)**, TAFE

Diploma of **Fashion**, TAFE

UNDERGRAD

Bachelor of **Game Design and Development**, Macquarie University

Bachelor of **Architectural Design**, University of Adelaide

Bachelor of **Design**, Edith Cowan University

Bachelor of **Music and Sound Design**, UTS

MATHS+DATA + CREATIVITY + JOBS

Game designer
$41K–$96K

Architect
$59K–$95K

Design Engineer
$59K–$112K

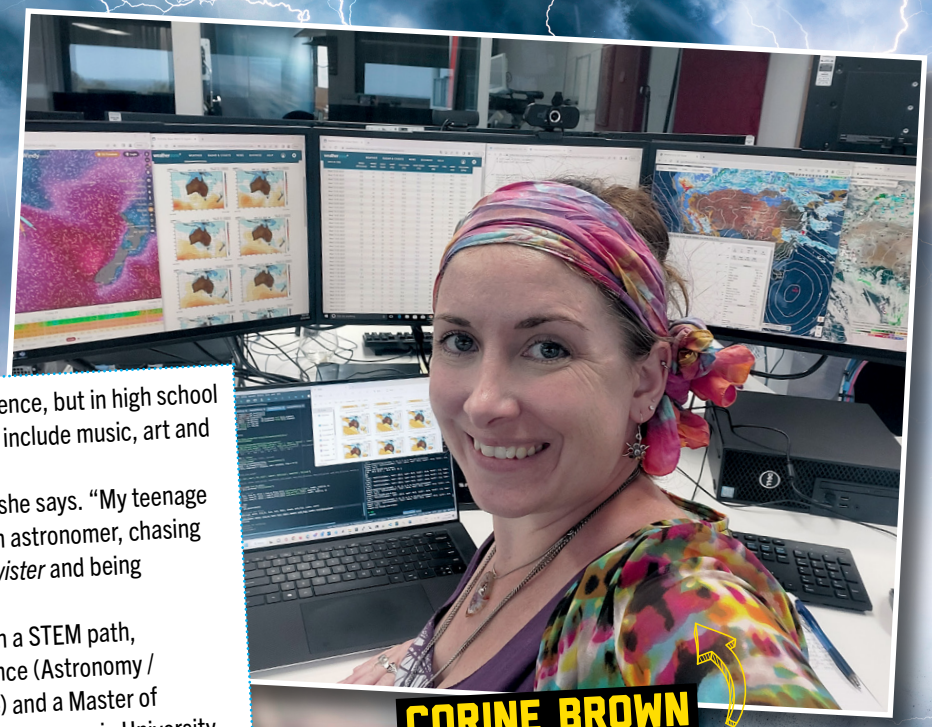
Fashion designer
$50K–$94K

Music producer
$51K–$85K

Salaries according to payscale.com

RIGHT AS RAIN

WORKING IN WEATHER PROVED TO BE THE PERFECT PATH FOR METEOROLOGIST CORINE BROWN, WHO USES MATHS AND DATA EVERY SINGLE DAY



CORINE BROWN
METEOROLOGIST

METEOROLOGIST AND FORECAST SYSTEMS DEVELOPER, WEATHERZONE

MASTER OF RESEARCH (MARS CLIMATOLOGY), MACQUARIE UNIVERSITY

BACHELOR OF SCIENCE (ASTRONOMY / ASTROPHYSICS, CLIMATE SCIENCE), MACQUARIE UNIVERSITY

Corine has always loved science, but in high school her interests expanded to include music, art and drama too.

"I wanted to be everything," she says. "My teenage dreams boiled down to being an astronomer, chasing tornadoes like Helen Hunt in *Twister* and being a successful musician!"

Eventually, Corine jumped on a STEM path, completing a Bachelor of Science (Astronomy / Astrophysics, Climate Science) and a Master of Research (Mars Climatology) at Macquarie University. She is now a meteorologist and forecast systems developer at Weatherzone.

The maths in meteorology

For her job, Corine assesses weather risks such as heavy rainfall (number of millimetres in a period of time), damaging winds (usually gusts exceeding 80 km/hr) and snowfall (number of centimetres in 24 hours).

"Doing this requires assessing and interpreting data output from a number of numerical weather prediction models," she explains.

She's also part of the forecast systems development team working on testing and implementing a new ocean wave model that will output spatial plots and time-series data for significant wave height, peak wave period, peak and mean wave direction, and swell and wind wave data around Australia and other locations.

Her study and career journey hasn't been without its challenges, not the least of which has been managing a debilitating chronic illness (narcolepsy). But Corine says working on weather and climate models is great, and that coding always makes her feel a bit like Samuel L. Jackson in *Jurassic Park*.

"Any big weather event always gets me excited, although the impact that our work has on people isn't lost on me," she says.

She also loves that her weather risk analysis work can help facilitate optimised usage of solar and wind power for some of her biggest business clients and the general public.

"Being part of the renewable energy revolution helps me feel like I'm doing something of substance to avert the climate crisis." – *Louise Meers*

> **"BIG WEATHER EVENTS ALWAYS GET ME EXCITED, ALTHOUGH THE IMPACT OF OUR WORK ISN'T LOST ON ME"**

SUPPLIED / SHUTTERSTOCK

CAPTAIN PLANET CAREER

Are you passionate about the environment and want to make a difference? Then stick with maths at high school! Here's why…

From analysing satellite data to help us understand the impacts of climate change, to using data modelling to predict the spread of pollution in our waterways, there are plenty of opportunities to use maths and data skills to help protect our planet.

Environmental statistician, renewable energy analyst and ecological modeller are just a few examples of jobs that require a strong background in maths and data, and which are vital to solving some of our most pressing environmental challenges.

Whether you choose to study pure maths or data science after school, or you pursue a more environment-focused degree such as ecology or engineering, having a strong foundation in numbers is a must-have if protecting the planet is on your career radar. Not only are these skills valued in the job market, they'll also equip you with the tools you need to help shape a sustainable future for our planet.

And remember, maths and data careers aren't just for maths whizzes – just as environmental careers aren't just for dedicated greenies! In our digital world, where data and environmental challenges abound, these are two high-demand areas which, when combined, spell serious career potential.

So what are you waiting for? Our planet is counting on you! – *Gemma Chilton*

SHUTTERSTOCK

MOPPING UP OIL WITH MATHS

Oil spills are just one example of an environmental challenge that needs maths and data pros at the ready to solve!

OIL SPILLS

Can have devastating impacts on the environment, so it's important to act quickly and effectively to minimise damage when they occur. In 2010, the Deepwater Horizon oil spill released an estimated four million barrels of oil into the Gulf of Mexico, causing extensive damage to marine and coastal ecosystems as well as the local fishing and tourism industries.

MATHS AND DATA

Play a crucial role in responding to oil spills like these. Scientists and engineers use mathematical models to predict the spread of oil, estimate the amount of oil spilled and assess the effectiveness of clean-up methods. Data analysis is also used to monitor the movement and concentration of oil in the environment, and to track the impact of spills on wildlife and ecosystems over time.

TECHNOLOGY

Such as drones, satellites and sensors are also used to collect and analyse data in real-time, providing crucial information to emergency responders and decision makers.

START YOUR CAREER HERE

MATHS+DATA + ENVIRONMENT + STUDY

VET

Diploma of **Sustainable Operations**, Australian College of Business Intelligence

UNDERGRAD

Bachelor of **Engineering (Environmental and Climate Solutions)**, University of Adelaide

Bachelor of **Environmental Science**, Edith Cowan University

Bachelor of **Environment,** Macquarie University

Bachelor of **Science** / Bachelor of **Mathematics**, QUT

MATHS+DATA + ENVIRONMENT + JOBS

Data scientist
$65K–$128K

Environmental engineer
$60K–$108K

Environmental scientist
$56K–$90K

Marine biologist
$44K–$102K

Meteorologist
$65K–$113K

Statistician
$63K–$118K

Salaries according to payscale.com

DOING GOOD WITH DATA

Data scientists and statisticians are using their numbers know-how to help change the world

When you think about the work of a charity or non-profit organisation, such as a youth support group or a foodbank for homeless people, it's easy to picture the important services and products they offer.

What you may not realise is that the collection and analysis of data is shaping how these organisations function. Increasingly, charities and non-profit organisations are hiring people with data skills to help make their work more effective and so they can deliver programs that have a lasting impact.

For example, data professionals can produce statistics that highlight an organisation's impact, which in turn helps attract increased funding and support. They can also measure the progress of a charity's programs, and they can create reports on topics such as an organisation's yearly operational costs.

Whether you're interested in data analysis, statistics or programming, there are many opportunities to use your skills for social good. So don't be afraid to explore these options and consider a career that combines your passion for numbers with your desire to make the world a better place. – *Amy Russell*

THREE CHEERS

Check out these three real-world examples of how data pros at the Good Data Institute have used their skills to make awesome social changes.

#1 HELPING YOUNG FIRST NATIONS PEOPLE IN DETENTION

Data professionals worked with Brother to Another, a First Nations organisation that provides support to young people in detention. It wanted to measure the impact it was having on these young people's lives and improve how it was engaging with them. This included building templates in Google to record information from meetings and creating dashboards to measure the impact of those meetings.

#2 TOYS FOR YOUNG CARERS

CaringKids is a charity that provides toy boxes to children and teenagers who care for disabled or very ill family members. The boxes help the young carers to feel less alone and, hopefully, add some joy to their lives. CaringKids worked with pros at the Good Data Institute to learn what kids and parents thought of the toy boxes. They also organised the data they had collected on how many boxes were being sent and where they were being delivered to.

#3 PREVENTING LUNG CANCER IN INDIA

In India, lung cancer accounts for around 8% of all cancer-related deaths each year*. The Lung Care Foundation is a non-profit organisation that provides healthcare and education to people in India to try and prevent lung cancer. Data professionals from the Good Data Institute are helping the organisation measure how effective its programs are so it can give this information to its partners and financial supporters.

#1

SHUTTERSTOCK

5 MINUTES WITH A DATA HERO

VIVEK KATIAL
EXECUTIVE DIRECTOR, GOOD DATA INSTITUTE

The Good Data Institute is an Aussie-founded organisation that describes itself as "a community of socially minded data professionals committed to doing good". In short, it helps non-profits and non-government organisations (NGOs) get the most out of their data. We chatted with executive director and co-founder Vivek Katial about using your maths powers for good!

Have you noticed an increased demand for data analysts in the not-for-profit sector?

Absolutely – data and analytics are powerful tools to accelerate the impact of an NGO. Access to data enables these charities to report their impact to donors and identify issues with their programs. By using this information, charities can improve their services tremendously.

What are some of the benefits of using your maths and data skills for social good?

The obvious one is that it makes you a better person. From a personal standpoint, you're likely to get more fulfillment and joy from your life if your work is empowering others and helping to create a more sustainable planet. It's also a challenging and exciting field. You're working on building tools that often interact with millions of people. Although the work is hard, many organisations value employee wellbeing and there are perks to make your work more enjoyable.

SENIOR DATA SCIENTIST, QUANTIFUL >> TEACHING ASSISTANT, MELBOURNE BUSINESS SCHOOL

PHD RESEARCH INTERNSHIP, NASA'S JET PROPULSION LAB >> CO-FOUNDER AND EXECUTIVE DIRECTOR, GOOD DATA INSTITUTE

#2

#3

START YOUR CAREER HERE

MATHS + DATA + SOCIAL GOOD + STUDY

Bachelor of **Data Science**, Queensland University of Technology

Bachelor of **Science (Data Science)**, University of Melbourne

Bachelor of **Science (Statistics)**, UNSW Sydney

Bachelor of **Data Science**, RMIT University

Bachelor of **Data Science**, University of Western Australia

MATHS + DATA + SOCIAL GOOD + JOBS

Data analyst
$55K–$103K

Data scientist
$66K–$128K

Statistician
$63K–$118K

Salaries according to payscale.com

* CA Cancer Journal for Clinicians, 2018; 68 (6), pp. 394-424

DIVIDE AND CONQUER

How to kickstart a maths career while you're still at school

#1 Play games

Sure, having an awesome high school maths teacher is great, but there are also loads of free and low-cost resources that can help take your maths skills to the next level. And, yep, video games are up there with some of the most educational (and fun). Just make sure you still leave time to get your homework done!

Swap your PS5 games for these popular apps and online games:

- **Dragonbox Algebra**
- **Blokus**
- **Explorable Explanations**

#2 CV stalk

Love numbers, but can't quite get your head around what it would look like to make a living off them? Finding role models is a great way to get study and pathway ideas! For inspiration, our Role Models hub is where it's at (search by 'maths experts'), along with social platforms such as LinkedIn, Instagram and even TikTok.

Often, role models are happy to share their career stories, so it might even be worth chatting to your maths teacher or careers advisor if there's a particular professional you'd love to reach out to.

Pssst! Here are our fave local STEM accounts to follow on Instagram:

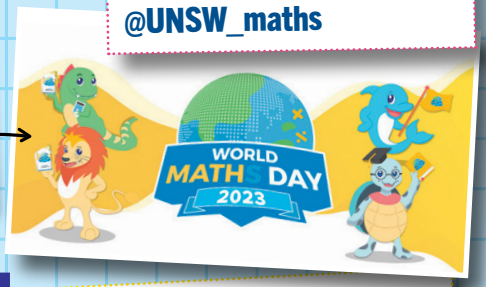
@misterwootube
@lily_serna_numbers
@UNSW_maths

#3 Enrol in extra-curricular activities

If you feel like you're the only one keen on numbers in your friendship circle and you want to make some like-minded mates, then maths comps and programs are an A+ opportunity to celebrate your passion.

Flex your skills and make friends while you're at it. Put these events in your calendar:

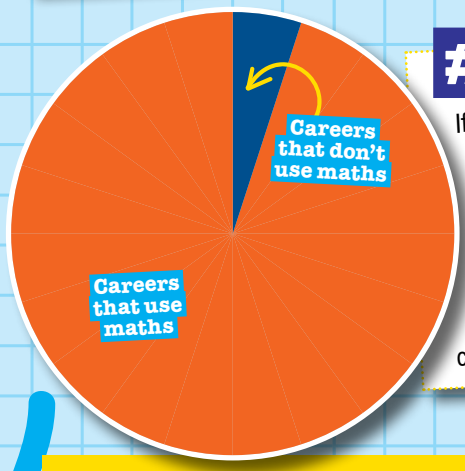
- **The International Mathematical Olympiad**
- **3P Learning's World Maths Day**
- **The University of Sydney's Mega Maths Day**



#4 Stick at it

If you're even considering a maths or data career, you'll need to study maths all the way through to Year 12. Good old two-unit is great, but extension is worth considering if a maths degree is on your radar.

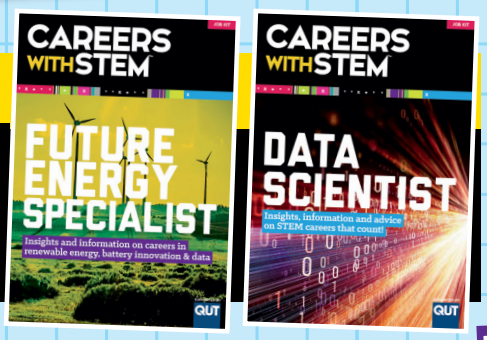
Even if you're not considering a maths-related career, it's still probably best not to drop it. Maths and data skills are useful in so many careers – even the creative ones (see page 23).



WHAT'S THAT STEM JOB?

Did you know you can download our free, 8-page Careers with STEM job kits for a full low-down on specific STEM jobs?

Get them at **CareerswithSTEM.com/jobkits**



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Co-founder, CEO & Publisher:
Karen Taylor-Brown
Co-founder, CEO & Head of Content:
Heather Catchpole

Managing Editor: Charis Palmer

Digital Editor: Cassie Steel

Digital Content Strategist: Louise Meers

Sub Editor: Amelia Caddy

Art Director: Katherine Power

Writers: Cassie Steel, Chloe Walker, Gemma Chilton, Heather Catchpole, Louise Meers, Nadine Cranenburgh, Charis Palmer, Amy Russell

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EDITORIAL & ADVERTISING ENQUIRIES:
Email: info@refractionmedia.com.au
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POSTAL ADDRESS: PO Box 154, Oyster Bay, NSW 2225, Australia

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