https://rfjackson.github.io/groupeleven

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Personal Information

Lachlan O’Neill

Student Number: s3802024

Nationality: Australian

Education:

- Queensland Certificate of Education

Profile:

“Hi, my name is Lachlan O'Neill, I'm 17 and I live in Queensland, more specifically, Brisbane, I work as an administrator for a disability support company on the Gold Coast. I graduated Year 12 last year. I was originally going to study a diploma of Software Development at TAFE and then continue with a Bachelor of IT with QUT afterwards, but I thought I might as well try and apply for the qualification through OUA anyway. I have Cerebral Palsy so I'm dependent on a wheelchair, it limits my capabilities somewhat, but I'm not too restricted in everyday activities. This also explains my choice in hobbies and my gamertag, “Wheelz”! Some of my hobbies include video games, Dungeons and Dragons, and reading.”

Richard Jackson

Student Number: s3829776

Nationality: United States

Education:

- BSc Psychology - Auburn University Montgomery
- Certificate III - Ambulance Communications - NSW Ambulance

Profile:

“My interest in IT is mostly around computer programming. My major interest in IT began when I attended the computer program at the selective high school I attended. However, the initial spark was when my father let me have his really old Tandy Windows 3.1 powered computer on which I taught myself QBasic. My major IT experience began in high school where I learned C++ and some Java. I also learned about computer hardware and repair along with gaining a CompTIA A+ certification. After high school, I joined a computer science degree, however, I never finished it, and ended up going down a completely different path. Now, my IT experience is primarily casual and mostly fueled by gaming and my current career. My love of gaming inspired me to build my own computer which I still use to this day. My current career, while not specifically IT, has allowed me to keep my analytical and computer skills sharp. As for hobbies, I love gaming, building plastic models (specifically Gunpla), and learning about programming!”

Dominique Western

Student Number: s3833565

Nationality: New Zealand

Education:

- High School Diploma

Profile:

“My interest in information technology stemmed from a fascination with space exploration - I’m obsessed with the idea of humanity becoming a space faring civilisation. This led me to a general interest in technology as I correlated this with society’s progression toward this future and the technology enabling it. My interest began at the age of 11 during a visit to an observatory which was the first time I had ever had a detailed look at the moon through the telescope housed at the observatory. My previous professional experience is as a Technical Expert role at an Apple storefront, which had me oversee the software troubleshooting and hardware repairs of iOS devices and an internship at a Digital Marketing Agency as a junior web developer. I am currently an IT specialist at Flight Centre. On the side, I’ve also worked on a number of projects such as a Spotify clone, a line-tracing robot using the Arduino microcontroller, websites and games.”

Amy Jackson

Student Number: s3833756

Nationality: Australian

Education:

- High School Diploma

Profile:

“I am a first generation Australian with both my parents migrating to Australia from Spain as children. My interest in IT started in the 1990's when my father gave me an old Toshiba laptop with a monochrome screen and running Windows 95 - which I was obsessed with learning how to use. Then, I finally was able to obtain internet in the form of dial-up. After getting dial up, the internet became my primary form of social interaction. I’m even married to someone I met on the internet 15 years ago! After finishing high school, I studied a Diploma of Information Technology Networking, but wasn’t able to commit to maintaining my full time job while doing it. Recently, in 2016, I built a computer from scratch for gaming. From there, I ventured into streaming. One day, I happened to stream my attempt at fixing a Macbook Air on which I had installed Ubuntu, when one of my regulars suggested streaming an install of Debian. After this, I realised that this was something I enjoyed! Other than the usual things, I share my life with a fluffy Japanese Spitz named Panda. She’s been part of my family for 11 years and is a constant source of happiness to everyone around her.”

Ronald Skinner

Student Number: s3832084

Nationality:

Education:

- Diploma of Software Development

Profile:

“I am interested in IT as I have a personality that enjoys solving challenging problems and helping people. My first experience with IT was when I was given an Apple 2+ computer for Christmas which I used for gaming and programming. During my schooling teachers would ask me for assistance with their computers. After completing high school, I completed a diploma in Software Development and gained a job as a junior programmer. From there I moved into network support, help desk, and onto managing larger networks and systems. My hobbies are motorcycle riding and socialising with friends.”

Team Profile

Lachlan O'Niell

Big Five Personality Test

Openness	90%
Conscientiousness	50%
Extraversion	4%
Agreeableness	79%
Neuroticism	77%

DISC Personality Test

Dominance	41%
Influence	7%
Steadiness	17%
Compliance	36%

MBTI

INFJ

Richard Jackson

Learning Style

Multi-Modal

DISC Personality Test

Analyst

MBTI

ISTJ

Dominique Western

Big 5 Personality Test

Openness	79%
Conscientiousness	58%
Extraversion	56%
Agreeableness	73%
Neuroticism	44%

Learning Style

Visual

MBTI

INFJ

Amy Jackson

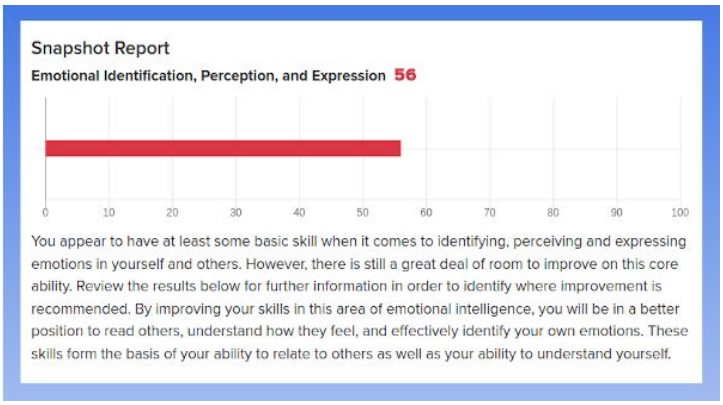
Learning Style

Tactile

MBTI

ISTJ

Emotional Intelligence



Ronald Skinner

Learning Style

Visual

Suitability

Confidence

Achievement Driven

MBTI

ENTP

On Our Team Personality Results...

Our personality result information gives us a bit of insight into who each of our team members is, even if done informally. For instance, our MBTI results give us an idea as to how outgoing or introverted we are, along with a few other personality tidbits. Our learning styles give us info on how we all learn. With this in mind, we can take ownership of tasks that suit our individual personalities, and have a better idea on how best to interact with each other.

Ideal Jobs

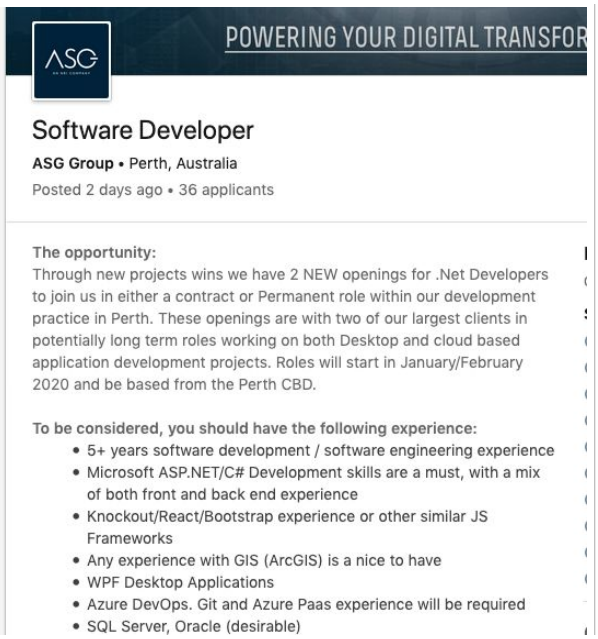
Lachlan O’Niell

Software Developer

Link:

https://www.linkedin.com/jobs/view/software-developer-at-asg-group-1676225563/?originalSubdomain=au

Screenshots:



POWERING YOUR DIGITAL TRANSFOR

Software Developer

ASG Group • Perth, Australia

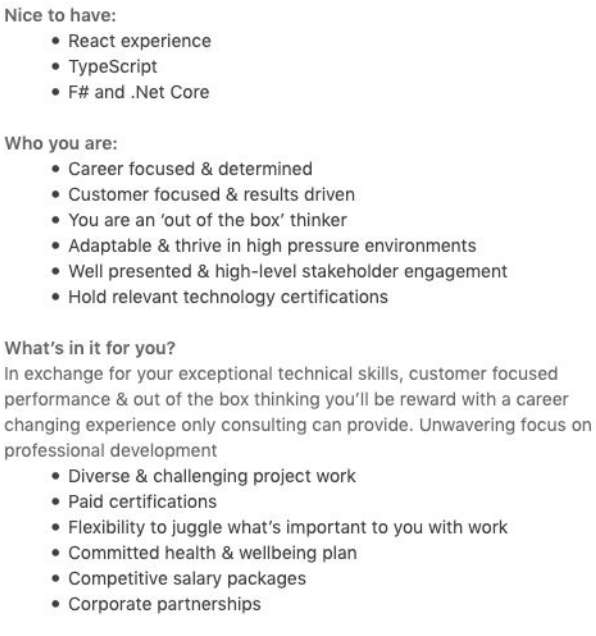
Posted 2 days ago • 36 applicants

The opportunity:

Through new projects wins we have 2 NEW openings for .Net Developers to join us in either a contract or Permanent role within our development practice in Perth. These openings are with two of our largest clients in potentially long term roles working on both Desktop and cloud based application development projects. Roles will start in January/February 2020 and be based from the Perth CBD.

To be considered, you should have the following experience:

- 5+ years software development / software engineering experience
- Microsoft ASP.NET/C# Development skills are a must, with a mix of both front and back end experience
- Knockout/React/Bootstrap experience or other similar JS Frameworks
- Any experience with GIS (ArcGIS) is a nice to have
- WPF Desktop Applications
- Azure DevOps. Git and Azure Paas experience will be required
- SQL Server, Oracle (desirable)



Nice to have:

- React experience
- TypeScript
- F# and .Net Core

Who you are:

- Career focused & determined
- Customer focused & results driven
- You are an ‘out of the box’ thinker
- Adaptable & thrive in high pressure environments
- Well presented & high-level stakeholder engagement
- Hold relevant technology certifications

What’s in it for you?

In exchange for your exceptional technical skills, customer focused performance & out of the box thinking you’ll be reward with a career changing experience only consulting can provide. Unwavering focus on professional development

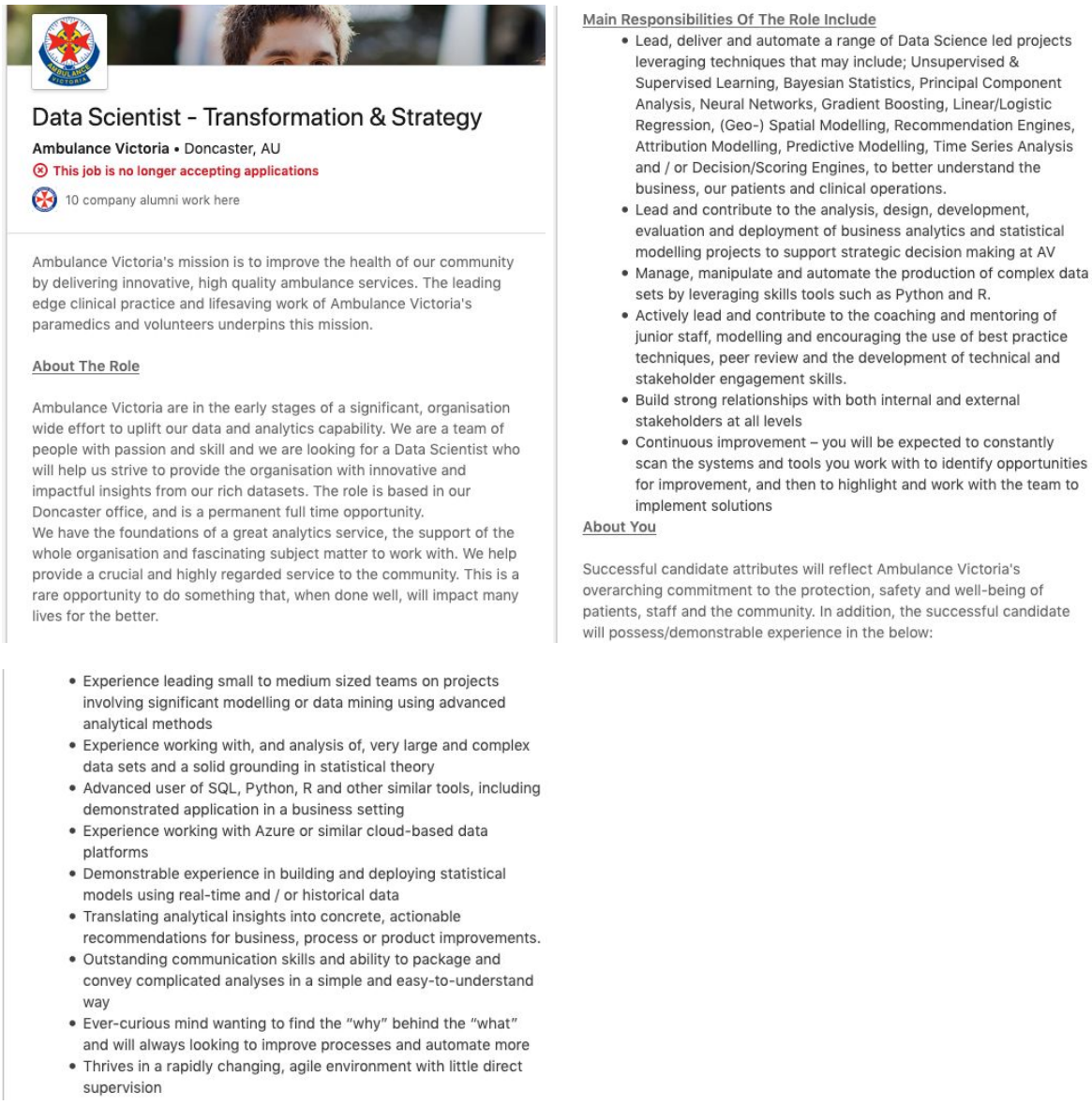
- Diverse & challenging project work
- Paid certifications
- Flexibility to juggle what’s important to you with work
- Committed health & wellbeing plan
- Competitive salary packages
- Corporate partnerships

Richard Jackson

Data Scientist

Link: https://www.linkedin.com/jobs/view/1624024360/?alternateChannel=search

Screenshots:



Data Scientist - Transformation & Strategy

Ambulance Victoria • Doncaster, AU

This job is no longer accepting applications

10 company alumni work here

Ambulance Victoria's mission is to improve the health of our community by delivering innovative, high quality ambulance services. The leading edge clinical practice and lifesaving work of Ambulance Victoria's paramedics and volunteers underpins this mission.

About The Role

Ambulance Victoria are in the early stages of a significant, organisation wide effort to uplift our data and analytics capability. We are a team of people with passion and skill and we are looking for a Data Scientist who will help us strive to provide the organisation with innovative and impactful insights from our rich datasets. The role is based in our Doncaster office, and is a permanent full time opportunity.
We have the foundations of a great analytics service, the support of the whole organisation and fascinating subject matter to work with. We help provide a crucial and highly regarded service to the community. This is a rare opportunity to do something that, when done well, will impact many lives for the better.

Main Responsibilities Of The Role Include

- Lead, deliver and automate a range of Data Science led projects leveraging techniques that may include; Unsupervised & Supervised Learning, Bayesian Statistics, Principal Component Analysis, Neural Networks, Gradient Boosting, Linear/Logistic Regression, (Geo-) Spatial Modelling, Recommendation Engines, Attribution Modelling, Predictive Modelling, Time Series Analysis and / or Decision/Scoring Engines, to better understand the business, our patients and clinical operations.
- Lead and contribute to the analysis, design, development, evaluation and deployment of business analytics and statistical modelling projects to support strategic decision making at AV
- Manage, manipulate and automate the production of complex data sets by leveraging skills tools such as Python and R.
- Actively lead and contribute to the coaching and mentoring of junior staff, modelling and encouraging the use of best practice techniques, peer review and the development of technical and stakeholder engagement skills.
- Build strong relationships with both internal and external stakeholders at all levels
- Continuous improvement – you will be expected to constantly scan the systems and tools you work with to identify opportunities for improvement, and then to highlight and work with the team to implement solutions

About You

Successful candidate attributes will reflect Ambulance Victoria's overarching commitment to the protection, safety and well-being of patients, staff and the community. In addition, the successful candidate will possess/demonstrable experience in the below:

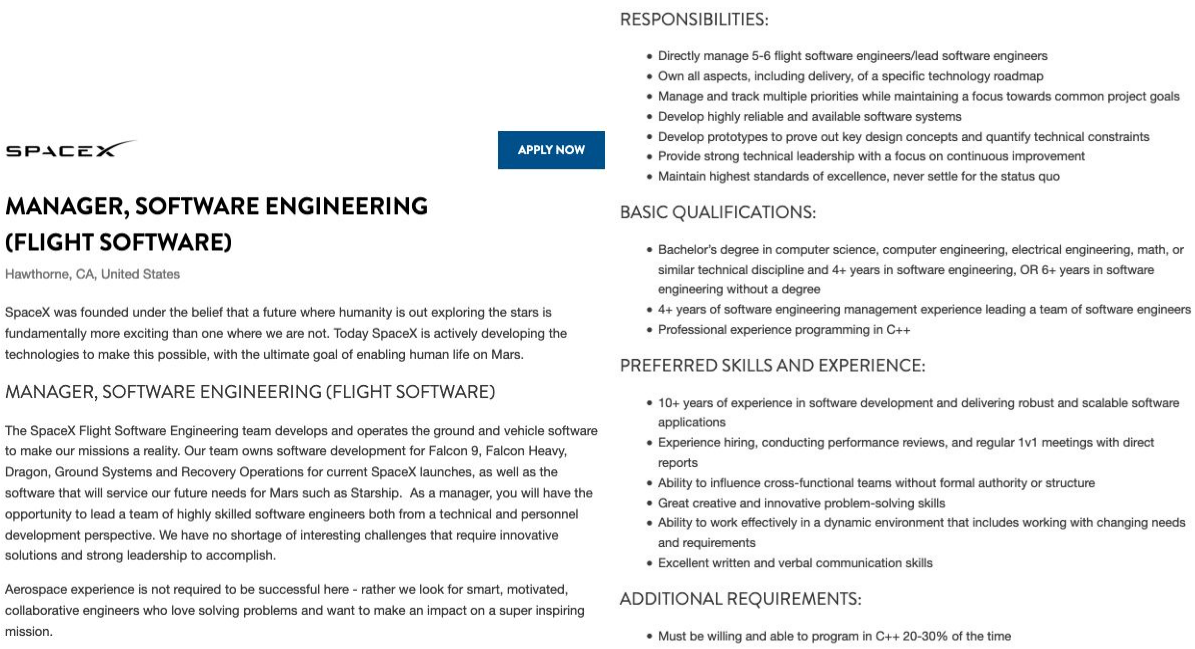
- Experience leading small to medium sized teams on projects involving significant modelling or data mining using advanced analytical methods
- Experience working with, and analysis of, very large and complex data sets and a solid grounding in statistical theory
- Advanced user of SQL, Python, R and other similar tools, including demonstrated application in a business setting
- Experience working with Azure or similar cloud-based data platforms
- Demonstrable experience in building and deploying statistical models using real-time and / or historical data
- Translating analytical insights into concrete, actionable recommendations for business, process or product improvements.
- Outstanding communication skills and ability to package and convey complicated analyses in a simple and easy-to-understand way
- Ever-curious mind wanting to find the "why" behind the "what" and will always looking to improve processes and automate more
- Thrives in a rapidly changing, agile environment with little direct supervision

Dominique Wester

Manager, Software Engineering

Link: https://boards.greenhouse.io/spacex/jobs/4456472002?gh_jid=4456472002

Screenshots:



SPACEX

APPLY NOW

MANAGER, SOFTWARE ENGINEERING (FLIGHT SOFTWARE)

Hawthorne, CA, United States

SpaceX was founded under the belief that a future where humanity is out exploring the stars is fundamentally more exciting than one where we are not. Today SpaceX is actively developing the technologies to make this possible, with the ultimate goal of enabling human life on Mars.

MANAGER, SOFTWARE ENGINEERING (FLIGHT SOFTWARE)

The SpaceX Flight Software Engineering team develops and operates the ground and vehicle software to make our missions a reality. Our team owns software development for Falcon 9, Falcon Heavy, Dragon, Ground Systems and Recovery Operations for current SpaceX launches, as well as the software that will service our future needs for Mars such as Starship. As a manager, you will have the opportunity to lead a team of highly skilled software engineers both from a technical and personnel development perspective. We have no shortage of interesting challenges that require innovative solutions and strong leadership to accomplish.

Aerospace experience is not required to be successful here - rather we look for smart, motivated, collaborative engineers who love solving problems and want to make an impact on a super inspiring mission.

RESPONSIBILITIES:

- Directly manage 5-6 flight software engineers/lead software engineers
- Own all aspects, including delivery, of a specific technology roadmap
- Manage and track multiple priorities while maintaining a focus towards common project goals
- Develop highly reliable and available software systems
- Develop prototypes to prove out key design concepts and quantify technical constraints
- Provide strong technical leadership with a focus on continuous improvement
- Maintain highest standards of excellence, never settle for the status quo

BASIC QUALIFICATIONS:

- Bachelor's degree in computer science, computer engineering, electrical engineering, math, or similar technical discipline and 4+ years in software engineering, OR 6+ years in software engineering without a degree
- 4+ years of software engineering management experience leading a team of software engineers
- Professional experience programming in C++

PREFERRED SKILLS AND EXPERIENCE:

- 10+ years of experience in software development and delivering robust and scalable software applications
- Experience hiring, conducting performance reviews, and regular 1v1 meetings with direct reports
- Ability to influence cross-functional teams without formal authority or structure
- Great creative and innovative problem-solving skills
- Ability to work effectively in a dynamic environment that includes working with changing needs and requirements
- Excellent written and verbal communication skills

ADDITIONAL REQUIREMENTS:

- Must be willing and able to program in C++ 20-30% of the time

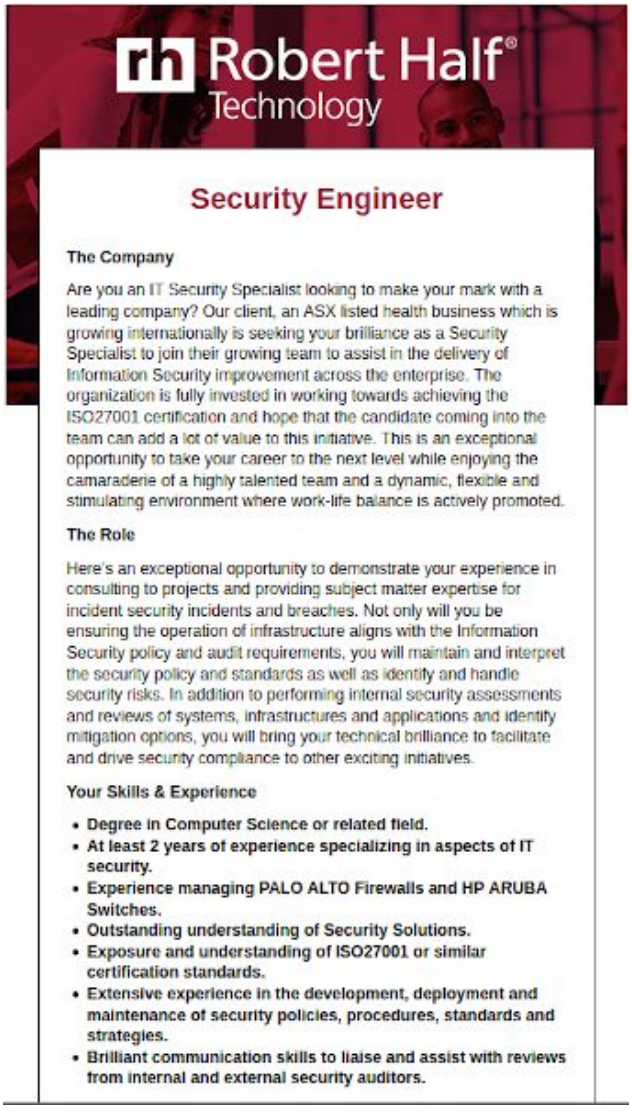
Amy Jackson

Security Engineer

Link:

https://www.seek.com.au/job/40500595?type=standard#searchRequestToken=5dfe900a-16ce-4d2d-b714-caf78fe8b4ff

Screenshots:



Robert Half Technology

Security Engineer

The Company

Are you an IT Security Specialist looking to make your mark with a leading company? Our client, an ASX listed health business which is growing internationally is seeking your brilliance as a Security Specialist to join their growing team to assist in the delivery of Information Security improvement across the enterprise. The organization is fully invested in working towards achieving the ISO27001 certification and hope that the candidate coming into the team can add a lot of value to this initiative. This is an exceptional opportunity to take your career to the next level while enjoying the camaraderie of a highly talented team and a dynamic, flexible and stimulating environment where work-life balance is actively promoted.

The Role

Here's an exceptional opportunity to demonstrate your experience in consulting to projects and providing subject matter expertise for incident security incidents and breaches. Not only will you be ensuring the operation of infrastructure aligns with the Information Security policy and audit requirements, you will maintain and interpret the security policy and standards as well as identify and handle security risks. In addition to performing internal security assessments and reviews of systems, infrastructures and applications and identify mitigation options, you will bring your technical brilliance to facilitate and drive security compliance to other exciting initiatives.

Your Skills & Experience

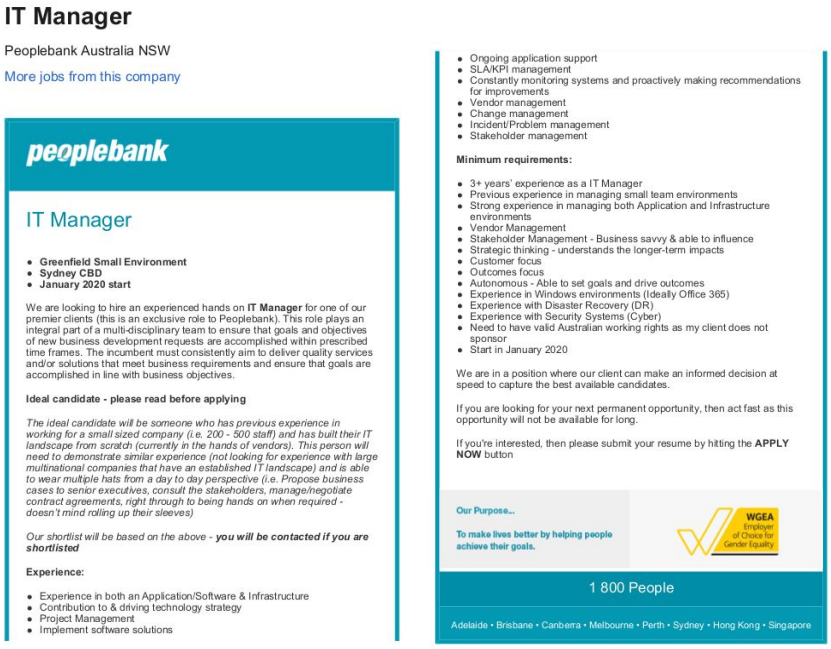
- **Degree in Computer Science or related field.**
- **At least 2 years of experience specializing in aspects of IT security.**
- **Experience managing PALO ALTO Firewalls and HP ARUBA Switches.**
- **Outstanding understanding of Security Solutions.**
- **Exposure and understanding of ISO27001 or similar certification standards.**
- **Extensive experience in the development, deployment and maintenance of security policies, procedures, standards and strategies.**
- **Brilliant communication skills to liaise and assist with reviews from internal and external security auditors.**

Ronald Skinner

IT Manager

Link:
https://www.seek.com.au/job/40545990?type=standout#searchRequestToken=f6bd19d3-13bd-4f6c-a22f-b1b5e49954d6

Screenshots:



IT Manager

Peoplebank Australia NSW

More jobs from this company

peoplebank

IT Manager

- **Greenfield Small Environment**
- **Sydney CBD**
- **January 2020 start**

We are looking to hire an experienced hands on **IT Manager** for one of our premier clients (this is an exclusive role to Peoplebank). This role plays an integral part of a multi-disciplinary team to ensure that goals and objectives of new business development requests are accomplished within prescribed time frames. The incumbent must consistently aim to deliver quality services and/or solutions that meet business requirements and ensure that goals are accomplished in line with business objectives.

Ideal candidate - please read before applying

The ideal candidate will be someone who has previous experience in working for a small sized company (i.e. 200 - 500 staff) and has built their IT landscape from scratch (currently in the hands of vendors). This person will need to demonstrate similar experience (not looking for experience with large multinational companies that have an established IT landscape) and is able to wear multiple hats from a day to day perspective (i.e. Propose business cases to senior executives, consult the stakeholders, manage/negotiate contract agreements, right through to being hands on when required - doesn't mind rolling up their sleeves)

*Our shortlist will be based on the above - **you will be contacted if you are shortlisted***

Experience:

- Experience in both an Application/Software & Infrastructure
- Contribution to & driving technology strategy
- Project Management
- Implement software solutions

- Ongoing application support
- SLA/KPI management
- Constantly monitoring systems and proactively making recommendations for improvements
- Vendor management
- Change management
- Incident/Problem management
- Stakeholder management

Minimum requirements:

- 3+ years' experience as a IT Manager
- Previous experience in managing small team environments
- Strong experience in managing both Application and Infrastructure environments
- Vendor Management
- Stakeholder Management - Business savvy & able to influence
- Strategic thinking - understands the longer-term impacts
- Customer focus
- Outcomes focus
- Autonomous - Able to set goals and drive outcomes
- Experience in Windows environments (Ideally Office 365)
- Experience with Disaster Recovery (DR)
- Experience with Security Systems (Cyber)
- Need to have valid Australian working rights as my client does not sponsor
- Start in January 2020

We are in a position where our client can make an informed decision at speed to capture the best available candidates.

If you are looking for your next permanent opportunity, then act fast as this opportunity will not be available for long.

If you're interested, then please submit your resume by hitting the **APPLY NOW** button

Our Purpose...

To make lives better by helping people achieve their goals.

WGEA Employer of Choice for Gender Equality

1 800 People

Adelaide • Brisbane • Canberra • Melbourne • Perth • Sydney • Hong Kong • Singapore

On Our Team's Ideal Jobs…

On its face, our choice of ideal jobs is quite diverse, running the gamut between programming, data analysis, security and management. However, there are a few throughlines that bind us together.

Firstly, several of the positions require leadership experience. Ron's ideal job of being an IT manager, requires several years of leadership experience as does Dominique's job of being a manager of software engineering. Richard's job also requires leadership experience in the form of directing a small team.

Secondly, several of the positions require experience in programming. Lachlan's ideal of software engineer requires extensive software development experience as does Dominique's. Richard's position also requires programming experience as well.

Thirdly, Amy's ideal job of security engineer and Dominique's ideal job of manager of software engineer require a Bachelor's degree in computer science or a related degree.

Despite these differences, all of the career paths are quite different. While Dominique's and Ron's jobs involve management, Dominique's role focuses on software engineering, whereas Ron's job involves general IT management. Lachlan's role is not management-related and focuses on the programming aspects of IT. With Richard's role, while it requires programming, it is more in service of data analysis rather than strictly developing software. Amy's ideal job is possibly the most different of them all, as it focuses on a different area of information technology (cybersecurity). While Amy's ideal role would involve knowledge of many different areas in service of securing computers against attack, however it is laser-focused on security rather than programming and general IT management.

Overall, the most similar roles would be Dominique and Lachlan's roles, however, our roles are quite different, focusing on different skill sets ranging from general IT management, management of programmers, software engineering, cybersecurity and data science.

Tools

Group Website

https://rfjackson.github.io/groupeleven

Github Repository

https://github.com/rfjackson/groupeleven

Commentary

The Github commit trail seems to be a pretty good indication of our group's work, especially when putting together the website and the report. Because the website is directly hosted from the GitHub, any updates to the website are committed incrementally as we updated the page. For individual contributions, either finished products or incrementally written contributions were uploaded. For the report, because it is being written with Google docs, a PDF form of the report has been updated and committed incrementally to leave a commit trail to demonstrate progress.

However, for those not posting incrementally, GitHub makes it seem like a few of our team members are doing much less work, because they do not quite have the volume of commits as some of the other team members. This is mainly due to them pushing finished products to the Github, and not posting incremental work.

Industry Data

Job Titles and Rankings

Student	*Job Title*	*Postings*	*Ranking*
Dominique	Software Engineer	539	1
Lachlan	Software Developer	337	2
Richard	Data Scientist	182	3
Amy	Security Engineer	70	4
Ronald	IT Manager	44	5

Based on the number of postings that directly correlate to the job titles for our ideal jobs the demand for software engineers, Developers and data scientists are far higher than security engineer and IT Manager. This may be related to the pay and to the number of positions likely to be required within an organisation i.e. a business may only need one IT Manager but multiple Software engineers and Data Scientists. The fact that security engineer has such low demand is indicative of my experience in the industry where businesses are reactive to security issues and not proactive.

Our Skills

Richard - Data Scientist

General Skills

Skill	*Postings*
Leadership	5,144
Communication	44,367
Mentoring	4,538

IT Specific Skills

Skill	*Postings*
Python	5,419
R	289
SQL	17,570

Ronald

General Skills

Skill	*Postings*
Leadership	5,144
Communication	44,367
Relationships	2,473

IT Specific Skills

Skill	*Postings*
Office 365	N/A
Disaster Recovery	N/A
Security (Cyber)	N/A

Amy

General Skills

Skill	*Postings*
Writing	15,590
Communication	44,367
QA/QC	4,444

IT Specific Skills

Skill	*Postings*
Palo Alto	N/A
HP Aruba	N/A
ISO270001	N/A

Dominique

General Skills

Skill	*Postings*
Organisational	15,544
Teamwork	14,364
Probelm Solving	16,445

IT Specific Skills

Skill	*Postings*
C++	692

Lachlan

General Skills

Skill	*Postings*
Planning	11,315
Communication	44,367
Problem Solver	482

IT Specific Skills

Skill	*Postings*
ASP.NET	1,370
C#	1,643
SQL	17,570
Oracle	1,313
Git	1,230
Java Script Frameworks	2,946

What are the Highest Rated Skills NOT in Our Skillset?

General Skills

- Troubleshooting
- Planning
- Detail Oriented

IT Skills

- Java
- Microsoft Windows
- SAP

Our Thoughts

Richard

“Having looked through the information, I can tell that data science is a relatively popular field but is overshadowed by a lot of software development fields. To be honest, looking at data is one of many interests that I have. Given the popularity of software development jobs, I would probably be keen to take up something software development related if my interest in data science wanes.”

Ronald

“Having looked through the data from Burning Glass my opinion of my ideal job has not changed. This is because of the ideal nature of the job, while the level of demand and requirements for the job have now been detailed, the ideal nature of the job is specific to my desires and not the market demand.”

Lachlan

“Having a look at the data from Burning Glass my opinion of my ideal job hasn’t changed. My ideal job isn’t based on industry demand or the required skillset. I’d be willing to learn anything in the listed skillset if it meant I would be hired for the position because my ideal job is taking something I personally enjoy and allowing me to do it for pay.”

IT Work

IT Work stuff goes here....

IT Technologies

Blockchain and Cryptocurrencies

By Amy Jackson

The current applications of blockchain technology are gaining momentum as it becomes more mainstream and accepted as a valid means of transactions - both financial and otherwise. The advantages of it's use are it's ability to provide a time-stamped, immutable record of data that is not controlled or owned by a single entity which lend it to be a possible solution to many issues current technologies have such as privacy, accountability and cost. (Blockgeeks, 2019) When talking about blockchain technology the predominant concept that is gaining widespread acceptance and recognition is that of cryptocurrency. With the increase in popularity of cryptocurrency such as Bitcoin and Etherium as both a means of conducting transactions and financial investment there has been a shift towards cryptocurrencies as standalone currencies or as currencies that are being created digitally but backed by other financial assets to try stabilise them to the point where they would be viable for mainstream use.

An example of this is the Venezuelan Petro - a cryptocurrency created by the Venezuelan government in 2018 and backed by the country's oil and mineral reserves. While the Petro has not been adopted successfully (Reuters, 2018), the concept of nationally created cryptocurrency is also being explored by the Chinese and Russian governments, with Vladimir Putin ordering the creation of the Cryptoruble and China relaxing it's ban on cryptocurrencies recently (Medium, 2018). Although this hybrid approach of tying cryptocurrencies to centralised resources is in opposition to the original purpose of decentralisation, it seems to be the current direction of mainstream cryptocurrency development. Beyond these speculative currencies that may occur in the next few years, the Facebook Libra cryptocurrency will be launched 2020 giving users access to a stable cryptocurrency that uses blockchain technology supported by global assets. The Facebook Libra currency has been backed by a significant amount of financial institutions and due to the overwhelming adoption of Facebook, WhatsApp and

mobile technology will likely gain traction amongst it's 2.5 billion active users. (Techcrunch.com, 2019)

Beyond the financial use of blockchain, the technology is also being implemented in smart contracts – a concept that Facebook, among others, is also currently developing using a programming language called Move. (Developers.libra.org, 2019) By using the blockchain ledger to record transactions there is the ability to remove the need for a third party when creating and validating contracts between people and other people or services. The applications of the blockchain's ability to record transactions and information using encryption is also an attribute that suits it towards other purposes such as voting and the storage of medical records. There are already real world examples of this, with several states in the US employing blockchain technologies to allow people to vote via a mobile app called Voatz. This app allows users to verify their identity using their biometric information and ID and then stores their vote after issuing a secure token to the user. (BitcoinExchangeGuide, 2018)

Another use by government is using blockchain to store medical data. By using blockchain to store individuals medical data, the information can be encrypted for privacy and moved securely. It also would give patients the ability to control access to their records. America's second largest health insurance company, Anthem, has announced in December 2019 that they have plans to move to using blockchain technology to store and access medical data within the next three years. (Forbes.com, 2019)

The implications of decentralised currency are varied in both scale and effect. On a small scale, there will be a move away from traditional payment forms requiring cash or card transactions and a move towards storing currency in digital wallets. With Facebook's Libra cryptocurrency, the ability to conduct transactions within it's Messenger and WhatApp apps will allow more ease in moving money to people without needing to implicate the traditional banking systems. The elimination of transaction fees and the ability to hold money without a bank account will also have a positive effect on

people who traditionally have been unable to have a bank account or have had to incur large fees using Western Union or other services to transfer money. This would have a positive effect on the world's poorest and most marginalised people. (Engadget.com, 2016)

On a larger scale, cryptocurrency has the potential to influence wealth and power distribution around the world. With the US Dollar being the driving force behind the world economy, countries that are affected by US led economic sanctions can stand to benefit from using cryptocurrency to escape the inflation that plagues their centralised currencies. Countries such as Venezuela, North Korea, Russia and China could possibly use cryptocurrency to come out from under these sanctions and be able to participate fully in a decentralised global economy.

Another common process that could potentially be disrupted by blockchain technology is the issuing of contracts. By recording the terms and conditions of a contract on a blockchain and executing the contract when the requirements are met, the need for intermediaries is eliminated as the contract will only execute once it's obligations can be fulfilled. The benefits include speed, accuracy, trust, security and monetary savings. With the automation of these processes, the current need for third party people to execute contracts is eliminated. (Nigel Gopie, 2018)

On a day to day basis, the effects of blockchain technology might not be overtly visible as the technology may be implemented into systems that we already use such as health records and electronic payments in a more behind the scenes fashion. However, the increased security that block chain offers would likely make me more confident in utilising services that use the technology. Financial transactions will likely be different without the need for a traditional bank, possibly making things like physical cards or bank accounts obsolete and an increased emphasis on carrying and protecting a digital wallet.

Among family and friends there could potentially quite soon be a much easier way to send money to each other via FaceBook Libra on Messenger, which is a widely used platform amongst people of all generations. As someone who likes to travel, the ability to have one currency that is accepted in various locations would be extremely helpful in mitigating both the hassle of currency conversion and the effects of exchange rates. This would also apply to buying goods online. Eventually, if blockchain technology became the standard when dealing with transactions that rely on accuracy and security, I think that people would be more willing to engage in transacting with each other as the risk of being defrauded is potentially lowered. Things like signing a lease or buying a car could become reliant on smart contracts, which will change the way that these transactions occur and also offer a secure means to ensure that these contracts aren't lost, altered or invalid. Due to the relative inability to alter the blockchain, there will be less reliance on taking people's word for things and more reliance on the data that backs up their claims which also makes storing data in the blockchain a great way to not only store transactions but history in a format that is unable to be edited to change it's content. It is hard to truly evaluate the effect that blockchain and cryptocurrency will have in the long term but as we move more towards mainstream acceptance it will likely impact us all in one way or another if it isn't already.

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Autonomous Vehicles

By Richard Jackson

Autonomous vehicles are vehicles that can be operated without a human to control it (TWI, para. 1). This can be separated into six different levels of automation:

- 0 – No Automation – The human driver handles all driving tasks even with warning and intervention systems (SAE International 2018, p. 19).
- 1 – Driver Assistance – The vehicle handles either steering or acceleration/deceleration while the driver does everything else (SAE International 2018, p. 19).
- 2 – Partial Automation – The vehicle handles both steering and acceleration/deceleration while the driver is responsible for everything else, such as monitoring (SAE International 2018, p. 19).
- 3 – Conditional Automation – The vehicle handles all driving tasks with a fallback of human intervention if the vehicle requests it (SAE International 2018, p. 19).
- 4 – High Automation – The vehicle handles all driving tasks under limited conditions including handling driving tasks (SAE International 2018, p. 19).

- 5 – Full Automation – The vehicle can do all driving tasks under all conditions without intervention (SAE International 2018, p. 19).

Currently, the state of the art for the general public seems to be between the level 2 and 3 mark, both Tesla's Autopilot and Cadillac's Super Cruise systems able to fully automate driving only under specific conditions, and still requires human attention. There are also other companies, such as Waymo, who are able to achieve level 4 automation, however they are typically limited to small geographic areas that can be thoroughly mapped (Kasilkowski 2019, para. 5). There is already a large proliferation of technologies such as adaptive cruise control (level 1 automation), and other assistive technologies such as lane-keeping assist and blind-spot monitoring to augment this.

With the current state of the technology, full level 5 automation seems to be relatively far off despite the promises of companies such as Tesla. We are likely to see level 3 automation to become more and more common over the next three years, with level 4 becoming more and

more relevant as companies continue to evolve their products beyond existing small geographic areas. The rollout of anything beyond level 3 automation to the general public's use soon seems unlikely, as level 4 automation seems to be restricted to heavily mapped geographic areas. Level 4 automation seems like it will still be confined to certain geographic areas with the use of taxis and shuttles with only the covered geographic areas increasing.

The technologies that make this possible include:

- Artificial intelligence: Artificial intelligence is used with all other systems to support image recognition for things such as road signs. It also can be used to make rapid decisions in response to information from the various sensors and cameras in the vehicle.
- GPS: GPS allows the car to determine its current position, which when combined with other information allows the car (using AI) to make decisions, such as slowing down before a bend. This, along with updated real time traffic information, can assist the car into making dynamic route decisions for the fastest route, to avoid traffic, and to avoid potentially dangerous situations.
- Detection technologies: This includes LIDAR, RADAR, and cameras. These technologies effectively allow the car to "see" what is around them. This ability to "see" allows the car to navigate around obstacles, see lane and road markings and see road signs and stoplights. Also, using image data, it can also assist in further pinpointing a car's location using the detection of landmarks.
- Internet connectivity: Because all of the processing technology is not able to used simply by the on board computer, a lot of tasks are offloaded onto the cloud, like the processing of data gathered to support machine learning. In future, there is also potential for Vehicle to Infrastructure (V2I) technology that allows the car to communicate directly with infrastructure such as traffic signals. This will all be supported by the advent 5G rollout, which promises much faster mobile data speeds than we currently have. This internet connectivity also allows the continual update of the software embedded in the autonomous car, allowing for continual improvement of self-driving capabilities.

As the development of autonomous vehicle technology continues, there are likely to be two obvious effects: the effect on the daily commute and the effect on careers reliant on vehicles. We may even see an increase in safety and less traffic congestion. In daily life, we will also have more "free time", as we will no longer need to focus on the actual driving task.

For the daily commute, the use of autonomous vehicle will give rise to commuters having more and more time to do other things besides driving. It will also allow commuters to go longer distances to go about their daily lives. With the mental burden of driving being taken away, commuters will be able to relax or do work whereas they would be previously occupied with the task of driving. With the ability to go longer distances, potential job-seekers can look further afield for jobs or live further from major cities.

Also, with the rise of autonomous vehicles, jobs such as taxi drivers and truck drivers will likely become more and more rare, as these roles will be supplanted by autonomous cabs and trucks.

Depending on the development of the technology, we may see an increase in safety due to the task of driving being taken out of easily distracted human hands. And with the algorithms in the cars becoming “smarter” and more intercommunication between cars, we may see better traffic management. Even with today’s autonomous vehicle technology, we already have technology that can help us keep our lane, assist with emergency breaking, and assist with avoidance of obstacles, helping us mitigate our relatively slow reaction time and our penchant for being distracted.

In our daily lives, the primary impact will be one of less mental energy being spent on driving. In my daily life, I spend quite a bit of time driving to and from work, as I have to commute from Shellharbour to Sydney. With an autonomous vehicle, the time I spend getting to work can also be spent doing other things, like leisure activities or other tasks. Depending on the safety of autonomous vehicle technology, I may even be safer, especially because I would not be driving while fatigued. This is especially important because I tend to travel early in the morning or late at night because of my job’s odd working hours.

My partner would also see the same benefits, however, she does not drive quite as far. However, it may mean she can look for other work that is based further away than our local area.

Daily travelling to the shops and doing errands would become less mentally taxing, and the time normally spent driving would now not be “wasted”.

With the advent of driverless cabs and shuttles, we may even decide to ditch car ownership altogether, and rely on on-demand transport, especially since these services would no longer need to depend on individual drivers in each car. Depending on the cost of such services, this could mean less money spent on car ownership and maintenance.

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Cloud, Services and Servers

Cloud, Services and Servers Report goes here...

Machine Learning

Machine Learning report goes here...

Project Idea

Our group project is a simple tool to be used in conjunction with the *Pokémon* video game series developed by Game Freak. Our tool will assist the competitive battling scene with quick and easy generation of competition ready Pokémon to be used for battles online with wi-fi or locally with wireless communication. Our tool will generate Pokémon as plain text files in the format described below:

Species (Gender) @ Item

IVs (If specified): # Stat / # Stat / # Stat

EVs: # Stat / # Stat / # Stat / # Stat

Ability: Ability Name

Shiny: (Yes/No)

<Nature Name> Nature

- Move 1

- Move 2

- Move 3

- Move 4

This format has been officially adopted by the Pokémon community and is widely used to quickly spread teams online allowing for critique, criticism and feedback on producing Pokémon better suited to a strategy. Then once the user has finished editing the team, they can then import it into their save game using *PKHex* an external save modification tool that supports the above format. Or if they want to test the team before importing it into their game, they can use *Pokémon Showdown!* a web-based Pokémon battle simulator used by professionals to test teams and strategies.

The ethics of using these generated Pokémon is a hotly debated topic amongst the community, because getting into the competitive scene has a much higher barrier for entry than most games, many people are fine with the use of these Pokémon. However, many people think that

using the hacked creatures is cheating and think that players should breed for hours if not days in order to obtain one correct Pokémon out of the six in a team.

The rules of the official Nintendo Pokémon Video Game Championships (VGC) state that "*The use of external devices, such as a mobile app, to modify or create items or Pokémon in a player's Battle Team is expressly forbidden. Players found to have Pokémon or items that have been tampered with may receive a Disqualification, regardless of whether the Pokémon or items belong to that player or were traded for*," and that "*A player's Battle Team may be checked at any time for illegal Pokémon by using an electronic or manual team check.*" If these Pokémon are generated correctly, the team checks will be unable to discern any difference between a generated Pokémon and a Pokémon caught legitimately.

Some argue that because these Pokémon could potentially be obtained in game without cheating, it is perfectly fine for them to use these Pokémon in a tournament setting. But because it is expressly forbidden by the rules of the event we as are obligated to say (regardless of our personal opinion) that we do not condone the use of these generated Pokémon in an official VGC event and that you only use these Pokémon in unofficial events set up by the community or in local battle between friends.

Group Reflection

Individual Reflections

Lachlan O'Niell

I feel that our group worked really well together, the only issues that I had with the group is that we started late, we had one group member leave early on, and finally we had one member join our group Discord a little late. Since we used Discord that made communicating with our group easy and GitHub made making progress on this assignment incredibly easy, even if we started a little late. Once we got going, we quickly completed our report and our group website.

I feel that our group could have gotten its feet off the ground earlier if we hadn't had a member leave or had a member join our group chat late, if both of these had gone right I feel like we could have made progress much faster. Honestly, I'm surprised that our group worked as well as it did, I think that was thanks in part to Richard, he took on an impromptu leadership role within our group. He made sure that our group got things done.

I've learned that all group work will work well if you parcel out different tasks depending on the individual, for example, I developed the website, Rick did the report, etc. Groups will also work better if you have a person suited to a leadership role to make sure people are on track for deadlines and the like.

Richard Jackson

The only major issue that I found with this group is that we started late. This was no one's specific fault, but it did mean we had a lot of catching up to do once we started moving. Unfortunately, potentially because we weren't very communicative at the start, we even had a team member leave, which I think served as the final stimulus to get working. Once we began moving, we slowly but began reaching milestones, and eventually had a completed report and website.

Collaborating through GitHub worked really well, as we rarely were able to meet as a group, so we could simply make contributions, and others could pick up where we left off. We used

Discord as well, which despite being more of a real-time communication tool, worked well for us as well. Despite having different schedules and priorities, we were able to effectively keep track of what we were doing and what needed to be done. Individually, we were able to claim specific tasks, and all of my team members put together good quality work.

Despite our tools being suited for the task, I feel that we could potentially be more communicative with the potential of setting up actual meetings rather than talking in a non-real-time fashion most of the time. With some extra real-time communication, I'm confident that we will be able to work on our project as a group.

Dominique Western

Amy Jackson

Ronald Skinner

Group Reflection