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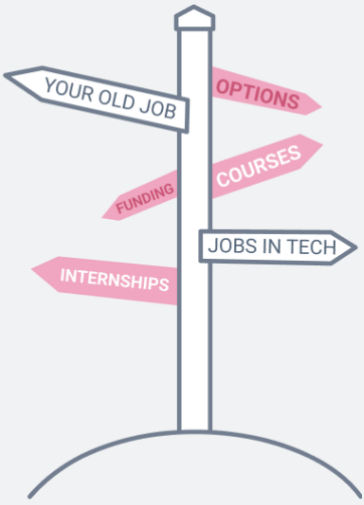

Pathways

A guide to help women, Māori and Pasifika people switch to a paid software technology role in New Zealand

joyous

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About Joyous

We are an Auckland based software tech company. We help large organisations include their people in making change happen.

The way we do that is with our two-way conversational feedback platform. We help organisations turn big objectives into small, regular, and open conversations with their employees.

Joyous is three years old. Our team includes around 40 people. Our roles are grouped across four functions: product, engineering, customer, and platform services.

We also have offices in Sydney, Australia, and Dallas, Texas.

We are aiming for a 50:50 (Female: Male) gender split at Joyous. At the time of writing this guide, we have a roughly 40:60 split.

We are also striving to become more inclusive for people of all types of genders, and ethnicities - while acknowledging we are not there yet.

Introduction

At Joyous, we have always been focused on building a diverse organisation. How? We work hard to increase the diversity of the candidates we interview.

Turns out, the technology sector in New Zealand is facing a major crisis. There are not enough people to fill the available roles. Nor is there *anywhere near* enough diversity within the existing talent pool.

The facts speak for themselves: Less than 25% of people in tech in New Zealand are women. For software engineers, the numbers are even lower at less than 20%.

We didn't set out to come up with a guide to help women, Māori, Pasifika and other underrepresented people get into a paid software technology role. There simply isn't an existing guide for New Zealand that is comprehensive enough.

The aim of this guide is to help anyone, particularly people underrepresented in tech, get into a paid software technology role in six months to a year - without needing a degree first.

The major parts of Pathways

Pathways is divided into four major parts:

- Understanding the opportunity
- Getting ready for a role
- Landing a role
- How to run an internship program (for organisations)

We want women, Māori, Pasifika, and other underrepresented people to have a single easy resource that can help guide and support them into a paid role in technology.

We want to see improved diversity across our entire sector, not just in Joyous.

We also want more technology organisations (specifically software organisations) to create internships for non-graduates shifting into technology from other careers.

Not only will this benefit your own team, but other organisations too.

PART 1: UNDERSTANDING THE OPPORTUNITY

Traits of a good technologist

One of the first things to consider is whether your traits suit a role in technology. Self-selecting is an important step in your journey into a paid role in technology.

Quick learner

The industry is fast-paced, and ever-evolving. Regardless of the role you may prefer, one thing is constant: things rarely stay the same for long. Good technologists enjoy learning and are quick learners.

Natural collaborator

It is becoming rare to work alone in a software organisation. In most roles, you will be collaborating on a daily basis with others who have the same role as you. You may also collaborate with people in other functions and roles, and with customers.

Good at receiving feedback

Being good at receiving feedback and taking action on it is critical. You will receive regular feedback to improve. Both what you are working on and how you might learn and grow as a person.

Adapt easily

Some people pride themselves on being adaptable, open to new ideas, and continuous change. They tend to flourish in technology roles. People who prefer consistency and predictability, less so.

Software organisations as a place to work

Software organisations are a type of technology company that focus on building software products. Software products are also sometimes referred to as *applications (apps)*, *programs,* or *platforms*.

Some software organisations build products that every day consumers use. A few great examples are: Instagram, Gmail, online games, and your banking app. Others might build products for companies which their employees use. A few examples are: Microsoft Word, PowerPoint, Excel, an accounting system like Xero, and a Point of Sale (POS) system.

Software organisations, along with many other tech organisations, tend to pay well and offer flexible working arrangements.

Putting effort into creating a culture that is fun to be a part of is becoming the norm and not the exception.

Best of all, due to the skills shortage and variety of roles, many people's careers progress faster than they would in other industries.

> "Working for Joyous is more fun than you'd imagine. We do lots of activities to get to know each other and build relationships. People are always willing to support me which takes a lot of stress out of the equation."

Salaries

Most roles within the tech industry are well paid. Entry level salaries are often between $60k-$75k per year. These roles (such as a software engineer, or a software product manager) can lead to salaries of over $100k per year within five years – without manager responsibilities.

Many high performers achieve salaries of over $100k within three years.

With manager responsibilities - meaning people report to you- roles go beyond $150k per year and as high as $250k+ depending on the role and organisation.

Ways of working

One benefit of working in tech is that often you only need a computer and a desk to do your job. Therefore, it is common for organisations to offer people flexible working arrangements.

Many will allow people to work fully remotely on a permanent basis, meaning that as long as you have a good internet connection, it doesn't matter where you live.

Others offer a mix of working from home and working at the office. For people working at home, equipment is often supplied.

Collaboration tools such as Slack, Microsoft Teams, and Zoom are commonly used for people to work together remotely. New starters receive plenty of on the job training and mentoring in their first year.

And for many organisations, fostering a mentoring culture is how they develop their people, thereby helping them to progress their career.

Career progression

As mentioned before, due to the skills shortage and variety of roles, many people's careers progress faster than they would in other industries.

Most roles have levels of seniority that help set a common understanding around responsibility, expected throughput, and salary. Most commonly, there is *intern*, *junior* (sometimes referred to as *associate*), *intermediate* and *senior*.

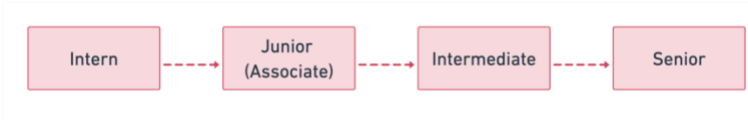

Figure 1 - Levels of seniority

Typically, you'll stay at one level between 1-3 years depending on how fast you develop. Beyond that, there are opportunities to shift into other areas, for instance from an engineering role into a product role or data science role.

There are also many opportunities to become a team leader, and further leadership opportunities beyond that.

Culture

Many tech organisations are focused on building a diverse culture that is inclusive of all types of people. They are striving towards a transparent, open environment – one where everyone can participate in the conversation with an equal voice.

From a social perspective, many make an effort to hold regular social events, and create opportunities for people working in different locations to get to know each other virtually. It is common to be invited out for a lunch, or enjoy a sponsored lunch in the office.

Often there are also smaller social groups that are formed around common interests such as board games, or sports teams.

Perks

Depending on the age, stage and values of an organisation, many also have a great set of perks. Health insurance, free counselling services, parental leave benefits, and additional days off are becoming more common place.

Many also have benefits for further learning and development opportunities such as study benefits.

Finally, earlier stage tech companies, known as *start-ups*, often have an employee share scheme. These shares have the potential to become worth a substantial amount further down the track if the company succeeds.

When selecting an employer, make sure you take the time to understand their perks. It might help you get a sense of what it will be like to work for them.

Five steps to getting a role in tech

This guide includes a lot of information to support you through each step towards getting a role in tech. Below is a brief overview of each.

You can expect this process to take between six months to a year – the precise pace is up to you.

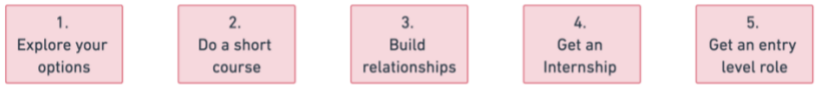

Figure 2 - Five steps to getting a role in tech

1 – Explore your options

Exploring your options involves forming a clear picture of the different types of roles on offer in technology. The first step is deciding which role is best for you.

The next section – *Which roles to go for* - will help you understand the different roles on offer.

2 – Do a short course

Once you've decided which role you are going for, the next step is to do an online or on-site course. Ideally, choose a non-university institution that is *also good* at helping to place its graduates into internships and junior roles.

Courses will vary in length from a few months to a year. Some can be done part-time or after hours. This book lists a number of course options for various roles.

Many people don't have funds available to pay for courses, so we have also included a comprehensive list of funding options.

3 – Build relationships

Before you finish studying it's a good idea to start building a network within the industry. Matchstiq.io has a good overview of the earlier stage organisations in software tech.

Use LinkedIn to create a profile that clearly indicates your desire to find a role in technology. Make connections with people in organisations you are interested in by adding them to your LinkedIn network.

This book also lists a number of Slack Groups you can join for free. Within these groups, they often mention events that anyone is welcome to attend. You can also ask questions, and get to know people.

4 – Get an internship

Try to get an internship once you are finished your short course. Most internships are at least three months long and they are also paid.

Getting an internship ahead of a junior role is an additional way to bolster your training. Internships receive the most mentoring and it's well understood that the purpose of the role is to help train you.

Getting an internship starts with applying online to employers. A good looking CV and cover letter can help you to stand out. Many will ask you to attend a few interviews. Some will ask you to do a simple exercise to test your skills.

If you have responsibilities at home, don't be afraid to ask for flexible working arrangements. Most organisations would be accommodating.

This book lists a number of sites that collate internship opportunities. Don't limit yourself! Reach out to employers directly, even if they don't list an internship program, you have nothing to lose.

5 – Get an entry level role

Many internships lead to a permanent entry level role, if you are fortunate enough to have this experience then: *mission accomplished*!

Other internships are a good way in to gain enough experience to land a role in another organisation. In this case, you will once again find yourself applying for a job, this time as a junior.

Depending on the type of role you are applying for, taking on a small personal project and showcasing it on-line is another great way to show your potential.

The most important thing is to be good at showcasing both your skills and who you are. Thereby showing how you might be an asset to someone's team.

Aside from skills, a positive attitude is often the key differentiator in choosing who to hire, so bear that in mind!

Which roles to go for

There is a huge variety of roles on offer in software organisations. For many roles, there are also variations within them, over and above the various levels of seniority previously mentioned.

In this section, we'll cover the most popular technical and less technical roles.

Technical roles

There are three broad categories of technical roles that we'll focus on: software engineering, data science, and quality assurance.

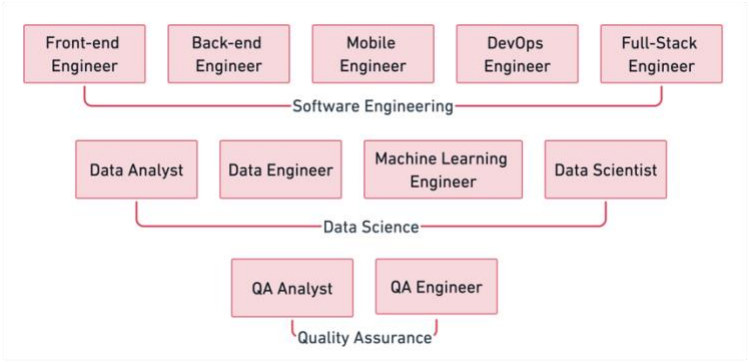

Figure 3 - Technical roles in software

Software Engineering

A software engineer is someone who writes code. It is worth noting that sometimes the word *developer* is used instead of *engineer*, but essentially they refer to the same thing.

There is an enormous demand for software engineers, and many organisations are unable to get enough good people to fill their open roles. Therefore, the starting salary for an engineering role is higher than some other roles.

Writing code is both challenging and stimulating. It's also highly rewarding as there is a clear output from your input. The role suits people who enjoy problem solving, are logical thinkers, and are good at creating structure.

Being good at communication is important. However, you don't need to be an extrovert to excel at this role.

Here are some popular engineering roles and what they do:

- **Front-end engineers** work on the interface that users interact with.
- **Back-end engineers** work on the behind the scenes logic and databases.
- **Mobile engineers** work on Android, iOS, and Windows phone apps – delivering apps to the stores.
- **DevOps engineers** work on the environment, installation, configuration, and optimization of an app.
- Some organisations prefer hiring **Full-stack engineers** who work across some or all the areas listed above.

Data Science

People working in data science are involved with preparing and analysing large amounts of data. They then review the results of that analysis to uncover patterns and enable companies to draw informed insights.

There are many areas of data science. Some of the popular areas are image processing (identifying patterns in images), natural language processing (identifying patterns in language), and statistics.

Data Science is earlier on in its journey than Software Engineering. Due to the huge potential of the field, there is also an increasing demand in talent for it. Diversity aside, the current talent pool in New Zealand is extremely small.

Data Science suits people with analytical minds, who enjoy doing research and experimenting with new things. It is also important that you have really good attention to detail.

Data Science is not well suited to people who prefer clarity on how to go about solving a problem, as it can be up to them to uncover a new way of doing so.

Here are some popular data science roles and what they do:

- **Data Analysts** prepare and analyse data. This involves looking at large amounts of data, ensuring it is in the right format without errors, and then analysing it.
- **Data Engineers** build systems that collect, manage, and convert raw data into usable information for data scientists and data analysts to interpret. Their goal is to make data accessible.
- **Machine Learning Engineers** create programmes and algorithms known as machine learning (ML) models that enable machines to take actions without being directed.
- **Data Scientists** do all of the above as well as identify and design many experiments with data to try and uncover underlying insight and value for an organisation.

Quality Assurance

People working in quality assurance are tasked with ensuring what has been designed and built is working as expected. Basically their job is to try and break things!

They ensure that a product is stable, reliable, performs well, works across all the expected environments (such as computer or mobile), and a large number of people can use it at once without it falling over.

It is worth noting that sometimes the word *tester* is used instead of *quality assurance*, but essentially they refer to the same thing.

Here are the two most popular quality assurance roles and what they do:

- **Quality Assurance Analysts** prepare plans for how they will go about testing what has been developed by engineers. They will then run those tests, or help others to run them. They will also make recommendations for what needs to be fixed, and what needs to be more easily testable through automated testing.
- **Quality Assurance Engineers** help to automate tests that will detect and prevent bugs from being released in important parts of the product when new features come out. This enables the testing effort of an organisation to be less manual, and therefore of higher quality.

Non-technical roles

There are three broad categories of *less* technical roles that we'll focus on namely: *customer care*, *product management,* and *product design*.

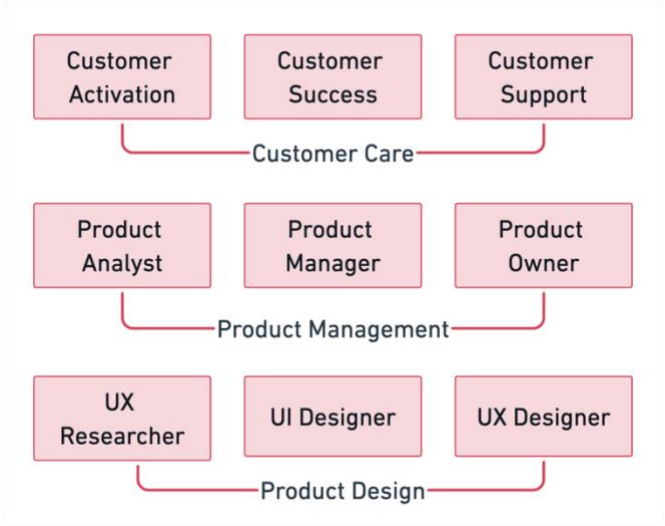

Figure 4 - Less technical roles in software

In larger organisations, for each category, it is more common to see these duties separated out into different roles as described below.

In smaller organisations, within each category they are often rolled up into one role. At Joyous, quite uniquely, we combine all nine roles across all three categories into one - which we call *Full Stack Product*.

Customer Care

Customer Care, sometimes referred to as *Customer Success*, or *Customer Service*, ensures that customers achieve or exceed their desired outcomes while using your product.

Customer Care is a good entry point into the tech sector. The skills required are often more transferable from other industries and roles. It can give someone who has very low technical skills the foundation they need to progress into other roles.

Customer folks work directly with customers. They help customers get started with the product, learn all the features and benefits of the product, and get consistent value from it. They are also the first point of contact if any issues arise.

Being good at communicating is critical for this role, and if you have natural empathy for others, and want to help people succeed, then this is a good option for you to consider.

Roles in customer success are not in as high demand as other roles listed in this book. The salaries are also not typically as high.

Here are some popular customer care roles and what they do:

- **Customer Activation Managers** support customers using a product for the first time. Their goal is to ensure that a customer gets the most benefit from the product, setting them up for long term success.
- **Customer Success Managers** look after your customers by building relationships with them long term. In some organisations, they become involved even before a customer has agreed to use the product. Their main goal is to proactively ensure that customers are getting real value from using a product over time, and don't stop using it.
- **Customer Support Managers** are on the front lines. They are replying to live chat messages, handling questions about where to find certain features and answering ad-hoc questions about options and functionality. They are often also tasked with writing help articles and creating training materials for customers. Compared with *Customer Success Managers*, they tend to be more reactive.

Sometimes the roles above are advertised using the word *Specialist* instead of *Manager*, but generally they involve the same broad responsibilities.

Product Management

Product Management involves figuring out what the most impactful features are that should be added into a product, and then deciding which things will or won't get built.

Product folks work very closely with others. They help everyone understand and agree what the priorities are.

Being good at collaborating and communicating is critical for this role. It is part of the role or product management to help other people provide input at appropriate stages.

They then help figure out the best way to build a new feature alongside designers and engineers. Providing clarity along the way as new features are being built, and once a new feature has been released to users.

There is a notable increase in demand for talent in product management, and no clear pathway into a Product Management role from university. Therefore, many Product Managers start their tech career in another role, and transition into Product Management later on.

Regardless of the industry, Project Managers, or people who are responsible for organising and co-ordinating complex systems or processes might find a transition into Product Management easier than others.

Here are some popular Product Management roles and what they do:

- **Product Analysts** support product teams in their product decisions using data to inform the next steps. They use data to understand how to make the product amazing, how to delight users, and how to make the product useful and helpful for users.
- **Product Managers** identify the customer need and larger business objectives that a product or feature will fulfil. They define what success looks like for a product, and help rally the entire team to turn that vision into a reality.
- **Product Owners** is a role that comes from a methodology called Agile Scrum. They are responsible for defining exactly what will be built and prioritising the order of the smaller units of work.
- **Business Analysts** are responsible for collecting technical details so that a product can be developed. They work with engineers to form how a solution can be built.

Product Design

Product Design involves using different tools and approaches to create an interface and experience that helps a user achieve their goal.

Product Designers work closely with Product Managers, Engineers, and customers alike while creating and validating their design solutions.

Being creative and having a natural flair for design is as important as being a good collaborator. The best product designers crave input from others to help refine their designs further.

They pay close attention to even the most minor detail, while also considering the entire journey a user takes within your product.

There is a reasonable demand for Product Design; however, the ratio of Product Designers to Engineers is relatively low (perhaps around 1:5 or more). So the total number of roles available isn't as high as it is for Engineers.

Here are some popular Product Design Roles and what they do:

- **User Experience (UX) Researchers** study users, and collect and analyse data that will help inform the product design process.
- **User Interface (UI) Designers** focus on the look and layout of a product. They design how each element of the product will look, including buttons, placeholders, text, images, checkboxes, and any visual interface elements people interact with.
- **User Experience Designers** cover the overall experience a user has with a product. A user experience is determined by how easy or difficult it is to interact with each element or aspect of a product. They will ensure the user flows smoothly and intuitively through a process or task within the product.

Forget about the stereotypes

Unfortunately, many people still have outdated perceptions that software technology roles are meant exclusively males. Or that roles in technical industries are better suited to men than women.

People tend to picture a geeky guy, sitting alone in the middle of the night behind his computer. Perhaps he looks a bit like Mark Zuckerberg. Sadly, so many people assume that's what all software people look like.

This is completely inaccurate!

It is true that there's still work to be done in this regard. However, within the technology sector, we have long since moved away from this stereotype. We just need the rest of the world to catch-up and join us!

You may also think you need a background in tech, a strong technical vocabulary or be good at math. Although this helps, it's not necessary to succeed. Like many roles, you'll learn most of what you need to know on the job.

Rather than try to convince you of all this, several women working at Joyous have chosen to share their story with you. Each started out in a different industry only to shift into a role in technology later on.

We hope that you might identify with some of these stories, and see yourself in us.

Stories from others like you

Alice's story

"Hello! I'm Alice and I'm an intermediate Software Engineer at Joyous. I would say I had a pretty roundabout journey into tech.

When I first left school I went to study music. After a year it was clear that wasn't the right path for me. From that I moved to a Bachelor of Mechanical Engineering, which also wasn't a great fit, but I decided to stick it out. When I graduated I was sure of one thing, I didn't want to be a mechanical engineer.

I spent the next few years trying whatever seemed interesting. I did some work in radio, events, spent a year in New York City studying improv. I also fell into volunteering and working in tech education. I taught kids coding, Lego robotics and co-founded a beginner web development course called *Girl Code*.

In 2019, I found myself back in New Zealand, broke from travelling, with no real plan for what came next. Through my teaching experiences I had learnt some basic coding and enjoyed it. I had also met the folks over at Enspiral Dev Academy (EDA). On a bit of a whim, I decided to sign up for their bootcamp.

Over the next few months I discovered I really loved writing code. Soon after graduating I landed my first tech role as a Junior Front-end Developer. A year later I applied for a role at Joyous and here I am!

My favourite thing about my job is that I'm always learning and get to work with such a collaborative team. I tend to look for what's interesting and what's challenging and that's exactly what I get here."

Jae's story

"I'm Jae, a Software Engineer at Joyous. I graduated university with a degree in Education with hopes of being a primary school teacher. Unfortunately, a job shortage in the teaching profession left a lot of graduate teachers like me with no luck.

I spent over a year working as a relief teacher while applying for jobs in schools and failing hard. I eventually took on a teaching position at an after-school tuition centre where I helped children in maths. I really loved working with children and seeing the improvement in them, but I also had to do a lot of other non-teaching work to help the small business.

Four years in, I started feeling like I was stuck. I was teaching the same curriculum and I was doing something that I didn't enjoy. That's when my partner suggested exploring the idea of changing my career into tech as a software engineer.

It sounded scary. In my mind, tech was where nerds were. The kind of people who are super smart, (usually white boys) who spent their childhood at their computers. I didn't know if I'd like it. So, I took baby steps. I found some free online courses and taught myself basic web development skills in my free time, and soon I was thrilled at the fact that I could make a web page.

I then heard about (EDA), and after a lot of consideration, I decided to quit my job and enrol. The course was challenging. I was learning new concepts every day and those concepts built on top of one another.

Four years in again, but this time as a software engineer, I am so happy that I shifted my career path. I love that I solve problems, help build an awesome product, meet and work with other inspiring people and learn new things (and get paid to do it!)".

Farhat's story

"Hi, I'm Farhat Jehan and I'm a Data Scientist at Joyous. Working at a tech company was not something I planned for. I was just looking for a part-time job while I finished my PhD exams and applied for an Analyst role at Joyous. The rest is history!!

I got married at an early age - just two weeks after my final year exam in information systems. For seven years, I lived in the US and was a housewife. I spent most of my time cooking, cleaning, painting and making dolls.

Things didn't work out and I returned to Sri Lanka where I volunteered at an orphanage. After a year or so, I began a Masters in Information Management. During my Masters, I also taught information management. After a couple of years, I decided to do a PhD in New Zealand. My PhD was in mobile learning. It was about harnessing technology to improve the education system in Sri Lanka.

During my final exams, I started looking for jobs and applied for a Data Analyst role posted by Joyous. I started on a contract basis and within 4 months I was offered a full-time position. I couldn't refuse as I loved everything about Joyous.

The best thing about Joyous is that they always encourage you to learn. I've learnt more here than I did during my PhD. My role has evolved from Data Analyst to Data Scientist in just two years. I owe a big thanks to the wonderful leaders here who truly believe in me.

My role as a Data Scientist is challenging but I love it because every day I'm learning something new. I also have a great

support system so whenever I’m stuck or lost, I know where and whom to go to”.

Laura-Jane's story

"Hi I'm LJ and I'm a Product Manager at Joyous. Joyous was my entry point into the tech industry in 2018. How I landed here was very random, but the outcome has been extremely rewarding.

I spent 7 years studying, and started my career with typical student jobs. Waitressing, sandwich making at Subway, selling tickets, nannying etc. At one point, I was working five jobs and studying full-time. I was a sucker for punishment.

At university, I studied psychology and statistics and went on to complete a Masters in Organisational Psychology. After my Masters, I did 18 months of contract work with various companies. Through one of these companies, I was connected to Mike Carden (Co-founder of Joyous). Mike was particularly interested in the research I had done during my Masters which closely aligned with the research that Joyous was conducting.

I was initially offered an 8-week contract during which I produced research and content for Joyous. At the time, the company was small and couldn't keep me on full-time, so I went on to do a role in social media marketing. Fast forward a year, Joyous reached out and offered me a full-time position as an Analyst.

It was an easy transition for me as I knew a lot of the team already and was well supported during the onboarding process. Because Joyous is a start-up, there is so much to learn and help with, and so my role has since evolved into Product Manager and I couldn't be happier.

Now I spend my days learning and creating in a space that I feel I'm meant to be and that aligns perfectly with what I studied at university - how many people can say that!"

Opelo's story

"Hi, I'm Opelo and I'm a Reporting Analyst at Joyous. I was born and raised in sunny Botswana and spent a considerable amount of my younger years in the UK. When I finished high school, I faced possibly the greatest existential crisis of my life. The prospect of having to choose a university course that could potentially impact the next 40+ years of my life seemed rather daunting.

I enjoyed chemistry and was interested in something practical and technical so decided to study Chemical Engineering. I knew it was a course that would equip me with invaluable skills that would allow me to branch out into various disciplines.

After university, I decided to go travelling around Southern Africa, Europe, Australia. Somewhere during my travels, I met someone that was working as a data analyst and was fascinated by what he told me about his work. I did some more research and decided that this was a field I would like to go into but at the time I wasn't sure how to.

After a few years of travelling, I enrolled in a business management course to balance out the technical skills I'd learnt at university with more interpersonal and business skills. I chose to complete this course in New Zealand so I could still have the opportunity to explore the great outdoors and NZ was the perfect place to do so.

Shortly after my course, an opportunity came up to work for Joyous. I was excited because it was a great chance to get into tech and join a dynamic company that would allow me to learn

new skills to progress in my career. Six months down the line, I couldn't be happier to be part of an industry that provides constant learning opportunities, great work flexibility, and is at the forefront of innovation, diversity, and progress."

Kat's story

"Hello! I'm Kat and I'm a Product Manager at Joyous. My friends would say that they are not surprised I got into tech but my career path is not as straightforward as they might think.

I was born and raised in the Philippines where I was fortunate enough to have parents that bought their kids an IBM 386. From age 7, I tinkered with MS-DOS but mostly so I could play games and print posters. At the time, computers were toys. The idea of having your childhood fascination as a source of income was quite farfetched.

Over the years, the tech industry in the Philippines ramped up. By this time, I was the resident computer nerd at my all-girls high school (still proud of it) so it made sense to take up Information Management at university. While I enjoyed most subjects, I did not particularly love programming. So when I graduated, I left the idea of a tech career behind.

I ended up in various call centres in Manila for a few years. I also landed this cool job as an IP Relay Operator where I was a "human telephone wire" for the deaf, hard of hearing and speech disabled. It was good pay but it was not challenging enough and I ended up having an existential crisis. My brother insisted I give IT another chance so I applied at a tech start-up that had a graduate programme. I was then trained in a business analyst role. I was over the moon as this allowed me to pursue a career in an industry that I fell in love with at a young age without the need to touch code.

After a few years as a BA in Manila, an opportunity came up to move to NZ. Nine years in, I have worked as a BA, project manager and now a Product Manager at Joyous. I'm grateful for being part of this industry that's forever evolving — you learn something new every single day and you get to work with such a smart, fun, and diverse group of people. 100% recommend."

Davina's story

"Howdy, I'm Davina and I started at Joyous as a Business Development Associate before moving into a Product role as a Product Specialist. Coming from a non-technical background, my journey into a career in tech has been anything but linear.

I am originally from WA, Australia. I studied Human Resource Management and Industrial Relations at university and aspired to be a management consultant.

I moved to Sydney in 2019 and worked full time in start-ups and technology co-working spaces while I finished my degree. After completing my degree in 2020, I did a brief stint in consulting. This was five days before the first COVID lockdown. By the end of a tough year, I left this job feeling disheartened and lost. I realised I didn't feel the same excitement and passion that I had when working in start-ups.

Fortunately, I came across Joyous. Starting in Sales, allowed me to work with most of the teams within the business. I found that I naturally gravitated towards the Product team and was very lucky to given an opportunity to work with them.

What I enjoy the most about my Product role is working with customers to solve complex problems within their business. I also love working with the Joyous team to continuously improve the experience and functionality of our product.

Although I have hit a few roadblocks along the way and never ended up using my degree, I could not be happier with my journey so far and I'm excited about my future in the industry.”

Ruby's story

"Hi, I'm Ruby, and I'm Co-CEO and ♡ of Product at Joyous. I grew up in South Africa in a single parent family with a low income.

I was not interested in what was taught at school, so I paid no attention and got bad grades. At the time my passion was drama and musical theatre. After I graduated, I worked as a waitress for a year to save enough money to study Drama. I dropped out after a year. After that I started and quit many entry level jobs in various industries such as retail and hospitality. I kept giving up not long after I started something.

When I was 21 I decided it was time to find a good career path and stick with it. I did a one year course in IT. I found fixing computers, and working on computer networks really fun and interesting. I loved knowing how to do something that most people found complicated and intimidating – truthfully it wasn't all that hard.

At 23 years old I knew that I wanted be the one to build all these awesome apps that were loaded onto people's phones and computers. So, I started a bachelor's degree in software engineering – which I absolutely loved. I paid for my degree by doing software and design projects on the side. At 27 years old I finally graduated and for the first time I finished something that I was passionate about. I moved to New Zealand straight after.

I then got my first role as a software engineer. I loved writing code, creating beautiful interfaces, and solving meaningful problems. I got promoted from junior to team leader within two years. Five years later I shifted into product management and design, and now I'm here at Joyous - living my absolute best life.

I highly recommend the industry to anyone who's interested."

Explore further before deciding

Hopefully, one or more of the roles we shared interests you!

To confirm your interest, we recommend you explore what the role might entail further before deciding.

> "Talking to people with experience, and experimenting with a small personal project are great ways to confirm you are on the right track before going ahead."

Resources to help you understand the landscape

Matchstiq.io has many video interviews of people talking about their roles, and coverage from people across all types of roles in technology. In the interviews, people talk about what it's really like, and what they look for in people they hire.

Startmate is an organisation that co-ordinates fellowships to help talented, ambitious people from a multitude of backgrounds gain the network and skills needed to thrive in the start-up world across New Zealand and Australia.

Try before you buy

If you are interested in the more technical roles, then this blog by Skill Crush lists many helpful and totally free online courses that can get you started with the basics of coding.

If you are still keen to continue after learning a few things online, it is also a great idea to try and create a small project yourself.

If you are interested in becoming a product designer, then check out some tutorials from Figma. Figma is a popular, collaborative design tool that makes design accessible to more people. Anyone can create a free Figma account.

If you are still keen to continue after watching the Figma tutorials, why not try and design a simple web page or product?

If you are interested in Product Management, then it's a good idea to learn the different methods that software tech companies use to build software.

Agile SCRUM is the most popular, here Atlassian does a good job of describing it. Shape-up by Basecamp is increasing in popularity. Joyous has also developed its own method called Joyfully.

Reading up on these methods will help give you a sense of the structure you might be expected to support and encourage within organisations.

More broadly, Udemy have short courses on just about everything, and most cost less than $20. Try searching their courses for the role you are interested in and pick one or two options that interest you most.

Try not to see this exploration as a test of your ability, rather use it to see if you find the challenge stimulating and leaving you wanting more.

PART 2: GETTING READY FOR A ROLE

Overview

This section covers everything you need to get ready for a role. This includes: any resources you might need to consider, a selection of highly regarded short courses to choose from, and funding options for those who need extra support with finances.

> “Even if you are not financially set up to take on more costs, there are plenty of organisations that are willing to support you. Please don’t give up, just ask for support.”

Resources you might need

Before you start a course, it’s a good idea to consider whether you have the appropriate resources. The main resources we will cover are computer hardware, a space to work at home, internet connectivity and (if doing an on-site course) access to transport.

Many learning institutions will have a workspace, internet connection, and devices for you to use on-site. However, if you are studying virtually, you will need your own setup.

Either way, we recommend getting your own setup if possible. This allows you more time and flexibility to practice for your new role.

Computer hardware

For people who will be learning about engineering, data science, or UI/UX, you will need a laptop or computer that can run all the necessary software tools you’ll need to practice.

If you are trying to save on costs then a refurbished Lenovo Think Pad like the ones PB Tech offer are a good starting point, and can cost as little as $700. These are second-hand ex-lease computers that have been serviced to a high-standard before being re-sold.

If you have a bit more to spend, then Lenovo has a number of new options at different price points for you to consider. We recommend going for an option with *at least* 8GB Ram, a 128GB SSD Hard Drive, and a 14" screen.

Most designers, and even many engineers, prefer using Apple products over PC. So, if you can afford it you might want to consider getting an iMac (starting from $2,150) or a MacBook Pro (starting from $3,400).

For other roles, such as product management or customer success, an entry level computer will be fine. A Lenovo Chromebook costing less than $500 is a good example of a decent quality entry level Chromebook.

If you have a bit more cash after sorting a computer or laptop and want to be as productive as possible, then consider adding a second monitor, separate keyboard, and mouse or trackpad. These are 'nice-to-have's' but can increase your productivity by as much as 40%.

Home workspace

Having a calm and comfortable space to learn improves your ability to focus and be productive.

Most of us don't have much free space at home. It might be that your dining table or couch is all you have to work with. If so, then that will do just fine.

If you can find a small space, even if it's next to your bed, then consider adding a small desk. You could get yourself a foldaway laptop desk for less than $100, like this one from iFurniture.

If you are interested in a more permanent setup, you could get a dedicated compact/laptop desk. They start at 1.2m wide. Having a dedicated space could make a big difference, especially if you are sharing a house with other people and/or noisy kids. Here is another affordable option from iFurniture that also has shelves.

Going with a mechanical sit/stand desk like this one from PowerCore gives you the option of standing while working. While this is more expensive, it is good for your physical health.

If you prefer to sit, then having a good office chair such as this one from Warehouse Stationery, or options like these from PowerCore are worth considering. Worst case scenario grab a chair from the dining table. As long as you are comfortable - that's the most important thing!

Internet connection

Having a stable high-speed internet connection will be important, particularly if you are doing a virtual course. Virtual courses will likely include on-line video calls and on-line assignments.

Basic wireless broadband or fibre is available from organisations like Spark or Vodafone. Prices start from around $45 per month, and often include the cost of installation and the hardware you'll need to get up and running.

Access to transport

If you are attending a course on-site you will need access to transport to get you to and from the course.

Non-university short courses

University can be expensive and take many years to complete. We want to help you land a role within six months to a year. Here are some courses for you to consider, most of which take six months or less to complete.

Software Engineering		
Offer	**Price**	**Length**
Enspiral Dev Academy ☆We recommend Enspiral!	Free till Dec 2022	16 weeks
Free code camp	Free till Dec 2022	16 weeks
Open Polytechnic	Domestic Students $752	16 weeks
Mission Ready	Free till Dec 2022	19 weeks

Engineering Specialising in Web development		
Offer	**Price**	**Length**
Yoobee	Domestic Students $1,575	7 weeks
Developers Institute	Free till Dec 2022	10 months
Nelson Marlborough Institute of Technology	Free till Dec 2022	1 year

General Information Technology		
Offer	**Price**	**Length**

Whitecliffe	Free till Dec 2022	18 weeks
Nelson Marlborough Institute of Technology	Free till Dec 2022	19 weeks
Yoobee	Free till Dec 2022	16 weeks

Product Management		
Offer	**Price**	**Length**
Tech Futures Lab	$900 + GST	5 weeks
Colab Cohorts	$1,450	10 weeks
Product School	$4,499 - $9999	2-6 months
General Assembly	$3,500 AUD	2 months

UI/UX Design		
Offer	**Price**	**Length**
Yoobee	Domestic Students: $420	7 weeks
UX Design Institute	Early bird AU$3,850 OR AU$5,550	6 months
Mission Ready	Free till Dec 2022	19 weeks

Data Science		
Offer	**Price**	**Length**
Media Design School (Course I)	$195	6 weeks
Media Design School (Course II)	$195	6 weeks
Future Learn	$39/month	18 weeks

AUT & Institute of Data	Domestic Students $9000	12 weeks

Funding options

If you're looking for ways to help fund your study, our top recommendation is the Targeted Training and Apprenticeship Fund (aka free trades training). This fund allows learners to undertake vocational education and training without fees until 31 December 2022.

TTAF is available to all domestic students and students that have a NZ work visa.

Other funding options/scholarships are listed in the table below.

Institution	Eligibility
Mission Ready	Māori, Pasifika
Māori education trust	Māori
Te Tumu Paeroa	Māori
Ministry of Education	Māori
Yoobee	Māori, Pasifika, Women
Rocketlab	Anyone
COLAB Cohorts	Māori, Pasifika

PART 3: LANDING A ROLE

Overview

Even before you have completed your short course, you can begin to work on landing a role. This will help shorten the gap for you between finishing a course and your next steps.

In this section, we'll talk you through how to build relationships with people who might help you get a role, how to get an internship, and how to land an entry level role.

> "The tech industry needs more people like *you*. Anyone can learn any skill they set their mind to. Tech is no different. It's time to go for it."

Build relationships

Building relationships with people in the right types of organisations is important.

So we'll help you understand the different types of organisations that are out there, and suggest two ways you might start to build relationships with people in them.

Earlier stage vs established corporates

It's a good idea to compare the experience of working in a smaller company that is earlier on in the journey, such as a start-up or a scale-up, to that of a large corporate.

This will help you have a better sense of what to expect before accepting a role. There are two types of earlier stage organisations, known as *start-ups* or *scale-ups*.

A *start-up* is a newer organisation that is still determining product-market fit, usually they are younger than three years old.

A *scale-up* is an organisation that is slightly further along, has proven their product-market fit and is in the process of expanding.

A *large corporate* is an organisation that is already well established within their market and has a large number of employees.

On the next page is a list of common traits you can compare between the earlier stage organisations and large corporates.

These are general experiences and don't always apply to every company.

Trait	Earlier Stage Organisations	Established Corporates
Opportunities	Wear more hats, try more, learn more	More departments/roles you could end up in
Impact	Less people, rules, and restrictions mean you're more likely to have an impact on outcomes	Many people, rules, and restrictions can make it difficult to have a significant impact
Career structure	Less structure but usually more growth	Clearly defined career path
Flexibility	More flexibility	Less flexibility, but COVID is changing this
Job security	More risk the earlier the organisation, unless there is good capital runway, be sure to ask about this	Typically more stability and job security, however as seen in COVID-19 times, nothing is guaranteed.
Brand recognition	Less known, more work to secure and retain customers and capitalise, but might not have competition	Easier to sell and market stuff when people have an idea of who the company is, but will have competitors
Autonomy	Less hierarchy so individuals at all levels can make more decisions that impact the business	Hierarchical leadership means less individual decision-making
Process	Things move quickly due to fluid processes but there's not always a process for everything	More process heavy, things may move slowly, many are trying to combat this, but it's a hard challenge!
Resources	Typically less money and fewer resources available to you, however some start-ups are really well-funded!	Typically more money and more resources available to you, however more people to share it around between.
Pay	Pretty well-balanced between start-ups and large corporates these days	Pretty well-balanced between start-ups and large corporates these days
Breadth	More likely to work on a variety of things, less specialist roles	Less likely to offer roles with broad responsibilities, more likely to specialise

Create a LinkedIn profile

Use LinkedIn to create a profile that clearly indicates your desire to find a role in technology. Your profile is a simple way for someone to get to know you, it's pretty much the modern day CV.

Put effort into writing a tag line and description that expresses where your interest lies. Add any relevant courses and job experience you have. Even if you do some volunteer work, that's worth adding, and it says a lot about you.

Once your profile is updated, make connections with people in the organisations you are interested in by adding them to your LinkedIn network.

Don't be afraid to message people on LinkedIn and ask them to meet for a coffee or have a short video catch-up. Many people are more than happy to listen and also give you their advice.

Slack groups

Slack is a popular tool that technical folks use to collaborate with each other, both inside their organisation and with external groups.

Below are a number of popular Slack groups where people share information with each other. Such as job openings, advice, events and new tools.

Install Slack, and join any group that aligns with your interest. It's totally free!

Slack Group	Role Types
NZ Tech Women	Tech

Product Aoteoroa	Product
Mind the Product	Product
DEVANZ (Developers of AU and NZ)	Engineering
JavaScript New Zealand	Engineering
Develop NZ	Engineering
NZ Data Science	Data Science

How to get an internship

Internships are a great way to enter the tech industry. They can provide you with some work experience and exposure before you commit to a full-time role.

It's worth noting that some people skip this step and go directly to a junior role. That's fine for some, however it might be a more challenging leap for others.

Preparing your CV

A simple one page CV that looks good, covers all the basic information, and has no typos in it is what you need to prepare.

We suggest downloading a free template and editing it, rather than trying to create one from scratch. CoolFreeCV has some great templates for you to start from.

Some tips for your CV:

- **List up to three previous roles:** If you have any previous work experience, it's worth listing it, even if it's not relevant to the role you are applying for.

- **List any relevant skills** you have, or have picked up during your course, this may include any tools or technologies you can use, or soft skills, such as good communication.
- **List any relevant courses** you have completed.
- **Share a bit about yourself** it's hard to get a sense of who someone is without a paragraph or two about them. Think of it as your bio and make it relatable and friendly.
- **List links to your sample projects.** If you have no relevant experience, then having a few sample projects that people can check out might help you stand out from the rest. It also demonstrates that you are a self-starter which is highly valued in technology.

Internship programmes

Some organisations will advertise internships directly on popular job boards, and through their social media accounts. So, if there's a particular organisation you like, it's a good idea to follow them on LinkedIn, Facebook and Twitter.

Here are some organisations that provide or co-ordinate internships.

Organisation	Program Type
Summer of Tech	Internship
New Zealand Internships	Internship
Intern NZ	Internship
Startmate	Fellowship
Student Job Search	Apprenticeship

When applying for an internship consider these two things:

Write a short cover letter. If you are applying for a role online or via email you may have the opportunity to provide an introduction along with your CV. Keep this down to a few short paragraphs. Try to showcase your good qualities and interests, and share your enthusiasm for the opportunity. Don't oversell yourself, but make it clear you are keen to learn. Finally, explain why you think you would be a good fit for the internship.

Avoid typos if you can. A CV or cover letter with poor writing, or spelling errors is more likely to be discarded. Use a writing tool like the free online HemingwayApp to ensure your writing is up to a good standard. This tool can help everyone, but it will be especially useful if English is not your first language.

How to get an entry level role

Once you feel you are ready it's time to start applying for your first permanent role in tech!

Updating your CV

If you have done an internship, it's a good idea to update your CV and include it, while still keeping the total number of previous roles you list down to three. This might mean removing one of your previous roles.

Applying online

Below are a number of popular Job Boards where people list technology roles.

Platform	Role Types
Matchstiq	Tech

Seek	Tech
Trade Me	Tech
LinkedIn	Tech

All the tips shared for applying for an intern role still apply here! So don't forget to look over those again carefully.

Start as you intend to continue

Whether you are a woman, Māori, Pasifika, or other underrepresented person, we encourage you to start as you intend to continue.

Don't be afraid to ask questions, or ask for places to find answers. This is usually considered a good thing. As long as you have tried some basic steps to figure things out yourself first.

If someone has asked you to do something and you are feeling unclear, then ask for clarification. This will help you succeed faster.

Share your ideas and perspectives openly when given the opportunity to do so. If you have ideas to share and can't find the right opportunity, ask for it.

Above all, please be yourself. Your differences are also ultimately your strengths, and you are what's missing in the industry.

PART 4: HOW TO RUN AN INTERNSHIP PROGRAM

(FOR ORGANISATIONS)

How organisations can help

This part of the book is our call to action for start-ups, scale-ups and large organisations alike. We would like you to consider three things:

Firstly, if you already have an internship program, please consider opening it up to candidates who are shifting into technology, and are coming from a non-university path.

> "By opening up your internships to non-university graduates, you can help change someone's life. While also helping your organisation and the technology industry close the gap on our talent shortages."

Secondly, if you already have an internship program, consider if you might expand it to cover more roles, such as the ones we talk about in this book.

It is more common for internships to run in roles like engineering, but less common in other roles like product. This is something we will be considering ourselves in the near future.

Thirdly, if you don't yet have an internship program set up, consider starting one. It's never too early to start. It's also a smart way to find exceptional talent early on in their career. If you follow our tips below, this will save you some time and hassle along the way.

Overview

Internships are a great platform to introduce students and learners to the tech industry. Internships give people exposure to what it's like working in tech.

They also enable your organisation to find diverse and talented candidates who are in the early stages of their careers.

For the purposes of this section, we have focused on how to run a **software engineering internship program.**

Internships are typically run over a 3-month period during the summer holidays. There are two common methods used in intern programmes:

1. A group of interns is taken into a company and are given an intern project to work on together.
2. Interns are spread throughout existing engineering teams or squads and put on non-critical portions of the project.

In most cases, the work that interns are given is separate to the work of the permanent engineers.

At Joyous, we do things a little differently. Our interns are fully embedded into our engineering crews and ways of working. They work on the same features or projects as our engineers. This allows them to make a significant impact to our product within their 3-month period and means their internship is true work experience.

We've put together this short guide so that you too can facilitate successful summer internships. This guide will help you to *recruit*, *select*, and *onboard* the ideal candidates for you.

Recruiting candidates

There is a big diversity imbalance throughout the tech industry particularly at the senior level. However, there is a lot of diversity at the junior level.

> "Summer internships are a great opportunity to recruit people that aren't well-represented in tech."

This past year, we used the Summer of Tech Internship Programme to search for candidates. This programme offers a central place to look for talent and reduces the amount of admin required during recruiting.

You can also use traditional methods of recruiting such as:

- **Advertising on job boards:** e.g. Student Job Search, TradeMe, Workable, & Seek. Job boards allow you to get a diverse pool of candidates but require a lot of admin and information tracking.
- **Posting on the company socials:** e.g. LinkedIn, Facebook, & Twitter. Socials may get you fewer applicants and again require a lot of admin and information tracking. However, they can be good for expanding your talent pool.

With whatever methods you try, the key is to cast a wide net so that you get a diverse pool of candidates to choose from. We recommend starting with a few recruiting avenues, seeing what the response is like, and then adding more avenues as needed.

Selecting the ideal candidates

Find candidates with strong capabilities

Candidates who have some experience writing code are more likely to be effective. Favour people who have completed or are nearing the end of a reputable course.

Filter out first-time coders

Try to avoid candidates who are using the internship as their first ever exposure to writing code. Having candidates with strong capabilities ensures they can come into the role and work with the other engineers as peers.

Seek diversity

Because internships are a great way to diversify your team, we recommend talking to minority candidates first to try and get them interested and invested. Look at CVs, portfolios, grades, GitHub, and any other relevant activities to help you create a shortlist.

Provide a take-home exercise

Email shortlisted candidates a take-home exercise. The exercise should reflect the skills that you want to see in a candidate.

For example, if you work with large data sets, or complex data shapes, then an exercise that gets them to do something simple, such as producing a graph, using that kind of data would be appropriate.

If you consistently solve similar types of problems, then a simplified problem of that type would be worthwhile.

Interview successful candidates

If your candidates successfully complete the take-home exercise, set up an interview. We run a 90 minute technical interview that's similar to our normal engineer interview process.

We get our junior engineers involved in reviewing applications and running interviews for interns. They have a good understanding of what's required at a junior level as they are doing the job, so are well placed to help find the people at the right level.

It also gives them experience in being part of hiring and creating the kind of team they want to be part of.

Send your offers

From there, you can send offers to your best candidates. We use the Employment Agreement Builder tool for our intern contracts. We find it really easy to use.

Onboarding your interns

Onboard your interns the same way you would onboard your engineers. At Joyous, the first two weeks are spent pairing and helping an engineer on the work they are doing.

This allows the intern to get familiar with: the codebase; the work that's currently being progressed; and how the engineering team work together. This also gives the interns opportunities to ask lots of questions.

After their two weeks of pairing, the interns should be able to branch out and start to solve problems on their own. They continue to collaborate and check in with the engineers, but, they slowly transition into being more self-sufficient.

This does not mean the interns are given a bug list and sent on their merry way. Interns work on high impact problems that match their skill level so that they are always making a meaningful contribution.

> “At no time are they working on something deemed unimportant.”

Our top tips!

- **Put a lot of effort into hiring** the right people.
- **Treat interns as another member of the team** that can contribute rather than sectioning them off. This means incorporating them into the work that is already going on.
- **Collaboration is key.** Fully integrate your interns into the engineering team so that they can collaborate effectively with the engineers.
- **Retain the talent!** If your interns impress, offer them part-time or casual contracts while they complete their course or degree.

Conclusion

We are not yet done compiling all the options out there for you. Our plan is to begin approaching more organisations to create internship opportunities, support and funding to help people transition into software technology roles.

We will continue to try and achieve our 50:50 gender split, and work towards being more inclusive for people of all genders, nationalities, and backgrounds.

If this guide helps you to land a role in technology, then we would love to hear from you.

If you want to join our team, well - then we would love to hear from you too 😉

You can find us at joyoushq.com

All the best,

Ruby, Laura-Jane and the team at Joyous

Thanks

Aside from the references already shared throughout the book we wanted to say a special thank you to a few folks.

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