Case Studies

WOMEN INTO TECH

Women into Tech aims to provide support to female apprentices, students, and professionals in tech subjects to encourage them to progress and succeed.

Project led by **Edinburgh Napier** and **Stirling University** with funding and support from **Skills Development Scotland.**

The projects employs three approaches to encourage women to pursue careers in tech:

1. **Case studies** of women in tech roles, highlighting the diversity of women and jobs;
2. **Connect-ups**: themed online groups for women studying and working in tech in Scotland;
3. **Webinars** led by Equate Scotland looking at ways to address the challenges of working in tech and including some peer-mentoring skills.

More information: https://ada.scot/women-in-tech/

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WOMEN INTO TECH

LAURA ANDERSON

Cyber Security Analyst and final year Graduate Apprentice

What does your current role involve?

I'm a Cyber Security Analyst, working in the Cyber Operations Team. So we're looking at the alerts that are coming in from our different applications and tools, and we look at the vulnerabilities we have across Social Security Scotland. I've been in this role for a couple of months now. I'm still at university as well, doing the Graduate Apprenticeship scheme, at Edinburgh Napier. It's really good having the on job experience as well as having the university side of it. I feel like I can bring in some of the skills that I learn in university into my current job role, which is beneficial for me and for the team as well.

What do you enjoy about your role?

There's always something new every day. Every day is a learning day, because tech is ever-changing and there's always something new. Sometimes it can be quite challenging, but the challenge is always good. There's always something new going on that you have to try and develop more and work with your team. I think we've got a really good team as well, there's so much support here.

WOMEN INTO TECH

LAURA ANDERSON

WOMEN INTO TECH

How did you get into tech?

I started working with the Chief Digital Office about four and half years ago, as an admin assistant, doing a Modern Apprenticeship. Once I completed that, I then had to decide: Ok, what am I going to do now? The opportunity had came up for a Graduate Apprenticeship in the Security Team and I thought that's such an interesting job, there's so much to do. Security is so wide, there's so many different aspects that you can go down, so many different roles. So I thought that will be such a great opportunity.

I worried that I didn't have a great technical background, coming from retail. I didn't have coding skills, I'd never looked at it before. But I took the opportunity and it's one of the best decisions I've made. I found the support from my colleagues, from line managers, from mentors, has just been incredible. I feel like no question is a stupid question, like line managers and mentors are always keen for you to ask questions, no matter how small. I'm now in my fourth year of the Cyber Security Graduate Apprenticeship, doing my honours project, and a couple of months ago I was promoted to Cyber Security Analyst. I love doing what I'm doing now.

What would be useful to support women in tech?

I think definitely the work-life balance. There's a good work-life balance here. You're told you should make time for yourself and for your family and when you turn off, after your day, turn off. I've heard other people say they go into a job and there's so many men they feel like the odd one out. And coming into this job, you would think I feel pressured by there being so many men, but the way it is here, everybody's just treated the exact same and it's just so supportive. Within this organisation, I've never thought I wouldn't apply for something because it's like a man's role. There isn't that culture here at all. Having a woman mentor in Security has also been great.

And encourage girls to consider careers in tech?

When I'd left school there wasn't really anything like that, so I never really thought I'd go down that route. I thought, like a lot of people think, tech: you're going to be sitting behind a computer all day, you're going to be coding away, it's just going to be so intense. But it's not like that. Tech is such a large industry; there are so many different paths that you can go down and so many different roles that you can do. For girls that are leaving school, that are maybe thinking: ok, like, maybe I'm good at this, maybe I could have a wee look at doing this at uni or college — have a look at some of the resources online. We should get that push out there for girls to think you could go down that route, it would be really beneficial for you, because there are so many different routes to go. There is so much and it's such an exciting job.

KEHINDE BABAAGBA

”… one of the greatest beauties of tech - one can create and innovate with tangible results to show for it. ”

How did you find your way into tech?

I have always loved numbers and numeracy, and I recall being thrilled to solve maths problems from a very young age. Hence, I knew that any profession I would venture in had to be one that would hone my Maths skills. Being a person of many interests, I also loved public speaking, singing, and the arts and because of the subject selection process for university qualifying exams while I was growing up, I was faced with the choice between either an art or science subject focus. This was not particularly an easy task for me, however, my penchant for problem solving and numeracy surpassed all other passions and was in line with the science focus. After passing my university qualifying exams, I gained admission to study Computer Science at Bachelor’s level, followed by Computing Information Engineering for Master’s, after which I went on to do a PhD in Computing.

The choice to be an academic came naturally to me due to my love for problem solving, as earlier stated, which is at the heart of research - a crucial part of being an academic. Furthermore, since I thoroughly enjoy speaking to people and disseminating knowledge, teaching and presentations came with little difficulty to me. My career journey till this point hasn’t been marked with absolute clarity every step of the way, but God’s help, following passion, and picking up skills along the way have all contributed to where I am today.

WOMEN INTO TECH

KEHINDE BABAAGBA

WOMEN INTO TECH

On being a Woman in Tech

It is common knowledge that being a woman in tech comes with its unique challenges, even more so being a BAME woman. And while I believe progress has been made regarding embracing women in tech on a similar level as men, there is still a long way to go. There have been times I have felt compelled to push more or do more than my male colleagues to be heard, but I am pleased to acknowledge that those moments are becoming few and far between.

One thing I am certain of is that everyone celebrates results, and being a results-oriented person has made this journey very rewarding. This is perhaps one of the greatest beauties of tech, that one can create and innovate with tangible results to show for it. I particularly appreciate my current workplace, Edinburgh Napier University, for their effort in easing the barriers that women encounter at work. I believe that regardless of the barriers that might still exist in the tech industry, an innovative tech woman is one that will thrive and be celebrated.

What advice would you offer?

Firstly, I would like to demystify the myth that suggests that women can't thrive in tech, as several women, myself induded, have proven that to be untrue. You can be the tech woman that you desire to be, through commitment to doing all that it takes, which includes acquiring and sharpening the necessary skills. I have had to learn a multitude of things from scratch to upskill and thankfully, there are now many resources at one's disposal.

I have female colleagues who have transitioned from a non-tech industry into the tech industry by registering for courses, tutorials, and self-study. The learning curve might be steep at times, but I am certain that it will be worth it. Don't be afraid to push yourself, make mistakes, try something new on this journey, as the result is a world of endless possibilities!

ERIN BRISCO

”…what I love about tech is the breadth of topics it covers and especially how it interacts with and drives our day-to-day lives”

How did you find your way into tech?

Career-wise, I was always in retail and admin jobs. I wasn’t really sure what I wanted to do, and I never saw myself as career-oriented. I had studied a degree in Biology straight out of high school, but I wasn’t thinking about long term goals or feeling very driven.

When I was made redundant in 2019, I came across a vacancy for an entry-level database assistant role. The job description piqued my interested and I realised that I had a lot of relevant experience. I’ve always been drawn to natural sciences and quick to pick up new systems, but I had never taken any computing classes and knew nothing about coding.

Getting into any kind of tech role or retraining hadn’t occurred to me as an option. I was lucky enough to get the job and it really sparked something in me!

WOMEN INTO TECH

ERIN BRISCO

WOMEN INTO TECH

Tell us a little about your course?

I'm in the second year of my Graduate Apprenticeship in Data Science. It's been quite a whirlwind so far, learning so much while juggling work, study, and home life.

The idea of studying a degree was daunting at first as I was unsure whether it was the right direction for me. I was worried I would struggle with the topics and would make a terrible student! I knew it would be hard work, but it's been incredibly rewarding so far. Being able to see the real-life applications of what I'm learning keeps me engaged and gives me direction.

The course has helped me gain confidence in my own abilities and my newfound career path, and I recently took on a promoted role at work. I'm looking forward to learning as much as possible in the next two years, and I'm already excited to graduate and explore the world of opportunities out there.

What advice would you offer?

Just go for it! There are so many options out there for getting started, and many different courses to take. It's a great time to get involved in the sector as things are constantly changing. There are professions now that didn't even exist five years ago! I'd also say online resources like short courses are especially valuable for building on learning, no matter your confidence and skill level.

What interests you about tech?

Part of what I love about tech is the breadth of topics it covers and especially how it interacts with and drives our day-to-day lives. An area that I've enjoyed learning about through my classes is the intersection of technology and society. I'm interested in the growth of AI voice assistants in homes, the use of facial recognition tech, and similar developments. It's interesting to see the influence technology has on individuals and society as a whole, and the implicit biases and unintended uses (both positive and negative!) that come about. I think it's really important to be aware of the ethical responsibilities programmers have.

SARAH CLELAND

"Identify your skills early and build them up, use them to support the skills you have that need more work."

How did you find your way into tech?

I took my first computing course in high school and enjoyed every moment of it. We unfortunately didn't have a teacher to take the course further, so it was set aside. After leaving high school I tried joining the RAF to become a pilot, but my spatial awareness was nowhere near good enough to fly. I was also only 18 at the time and definitely not ready for that sort of life.

At this point I was at a bit of a loss with what to do with myself and a local college sent out prospectuses to encourage people to attend. I flipped through and saw they offered computing, so I applied. It was a subject I had previously enjoyed and felt I could do well in. I remembered it being challenging, interesting and a subject I could take in my stride. I got the grades I needed from college and made it into university. Since then, my interest and passion has grown, and I know for sure this is exactly what I'm meant to be doing.

WOMEN INTO TECH

SARAH CLELAND

WOMEN INTO TECH

Tell us a little about your course?

My degree is Computing Science. It is very varied which means there is always engaging material. I've covered a range of topics from games development, mobile app development, databases, networks, and programming. We've had the opportunity to try different languages such as Java, Python, Kotlin, and C. In the early years you also get the chance to do modules not related to your degree, so I chose criminal law and accounting. It's great to be able to develop yourself in your own unique way and build skills you wouldn't necessarily think you would.

The material is a good mix of code-based assessment and written assessment, giving practice for the dissertation year. The written ones are usually quite open –ended, giving a chance to do additional research and apply it to the context of the code project.

There are lots of opportunities for women on the degree, such as encouragement to participate in the Lovelace Colloquium, seminars and other events designed specifically for women. It's been so encouraging finding and getting to know other women in STEM through these events and not feeling like you're one of very few!

What advice would you offer?

My advice is to use your strengths to your advantage. Personally, I'm not the best at maths but I have plenty of patience to do loads of examples to gain the understanding I require. The skills you currently have are always transferable, even if it's not obvious at first. Identify your skills early and build them up, use them to support the skills you have that need more work. Don't let anything or anyone tell you that you can't do it and you don't belong in tech. I've struggled the last couple years with self-doubt from Imposter Syndrome and only recently have I got it under control. I think it affects all of us in tech to a certain degree, but you cannot let it affect what you're doing. Take it in your stride and use it to motivate and encourage you, don't let it take control and sink your passion.

What interests you about tech?

My dissertation project has been based on the Travelling Salesperson Problem and the Knapsack Problem, which I've developed a real interest in. I've been developing the project with a haulage company, so it's been exciting to develop a real, tangible project for an actual client. It's been very interesting researching the problems and exploring how these problems don't just apply to routing and loading in a haulage sense, but the TSP applied to things like DNA mapping, aiming telescopes at the stars and scheduling jobs. I've enjoyed the challenge of using everything I've learned the last 3 and a half years and combining it into a project that is my own. It's been important to manage my own time and balance the rest of the modules that need to be completed too, while maintaining my own high standards of work.

JEN CAMPBELL

Product Owner in the Scottish Government's Digital Transformation Division

What does your current role involve?

I'm a Product Manager, sometimes referred to as a Product Owner, in the Scottish Government's Digital Transformation Division. My role is to understand the users' and the business needs and set the direction for what we're developing. It's quite a common role in the private sector, in terms of things like developing apps. In Government, we tend to focus our work around services, so we're thinking about the service that's being delivered to the end user. My team are working on a service for outbound payments to people, whether that's benefit payments or grants or pension payments. We're still very much in a development stage, so my role day-to-day involves things like interpreting what's come out of user research, understanding business needs, such as rules around payments, and using that to determine the priorities around what we need to build and deliver. I work closely with everybody across the team — delivery manager, business analyst, user researcher, service design, developers and technical architects — lots of different roles.

WOMEN INTO TECH

What do you enjoy about your role?

I like being in the middle of things. I like the fact that I need to look all around, I need to be interacting with the development teams, I need to know what they're doing. I need to have enough of an understanding that I can have conversations with them and give direction in some areas, without being too deep in the technical detail. I'm also interacting with people in the financial processes side, as well as potential users in some scenarios as well. I've got a 360 degree view of what's going on and I need to be at the centre, being the person that can make sense of all those different bits and pull it all together. I'm a Big Picture type of person so I like having that wider viewpoint and trying to see the connections between things, seeing where we could make things better. And I really enjoy learning new things, for example I'm learning a lot about Cyber Security at the moment — because of the nature of what we're doing, it's really important I've been able to spend quite a lot of time with experts learning about it. Similarly, things like Cloud Architecture were quite new to me, but I've had the opportunity to start upskilling myself and I've really enjoyed that as well.

JEN CAMPBELL

WOMEN INTO TECH

How did you get into tech?

While studying Politics and French at uni, I did an internship in an HR department of a big insurance company in the US and spent quite a lot of my time on a digital project, looking for a new provider for part of their recruitment process. I spent a lot of time gathering requirements and spending time with their technical teams — stuff that is similar to what I do now and I really enjoyed that. After uni, I went into a graduate scheme with Accenture. That was quite an accelerated period of development, doing loads of different stuff and learning lots — business analysis work, some change stuff, some project management, really getting exposure to the breadth of what you can do by working in digital projects.

Then I joined the Scottish Government as a (digital) Transformation Manager. That was a great opportunity, because it brought together two areas that I was interested in career-wise, combining an interest in government and current affairs with digital. Initially I worked on the Social Security programme which felt like an opportunity to really make a difference. They were building this up from scratch and taking a user-centred approach — putting people at the heart of it — and I saw a really big digital opportunity there. I was working on what's now the Child Disability Payment and I found that really rewarding, because we were trying to develop a service that worked well for people who are often in a really difficult circumstance, and focusing on making the service as straightforward and supportive as it could be. Since then my role has evolved and I'm now a Product Manager and also head of our Product Community of Practice.

What would be useful to support women in tech?

I think it can be difficult at times to know whether you have the right skills to do a certain job, so there's something about understanding career paths and what you can do with different skillsets — how you can evolve them and move, whether it's sideways or upwards, whatever gets you to where you want to go. A lot of stuff in the tech world, that we work with day-to-day, is really new. So while people can have years of experience in IT, they probably don't have years of experience in every brand new technology that comes out. As things are opening up and changing, there are opportunities: you can learn about new technologies, and you can be as much of an expert as anybody else in it, because it's new.

And encouraging girls to consider careers in tech?

It's a wider set of careers than you might initially think. Tech is everywhere, so it opens doors. It can be a way to have a real impact in probably anything you can think of that you'd like to make a difference in. I was always interested in politics and government, and I'm able to make a difference in that field through a technology role. Think about what you're interested in, be flexible, and be open to the new opportunities that can come with the development of new tech in the future.

In a lot of tech jobs, what you're doing is developing something *for people*, so a lot of your job can end up being around understanding people. I've always worked in teams that work very collaboratively, so you've always got that opportunity to build those relationships and have a great working experience with your team.

LOUISE DRUMM

”…[Tech] has also been an area with lots of change, so there are always new platforms and developments to make things interesting”

How did you find your way into tech?

My brother is 10 years older than me and when he got interested in computing and studied it at university it meant there was a computer in the house and I started to type out the Basic programmes printed in magazines. It was a slow business, but I got a real satisfaction from it, even though I must only have been about 7 or 8. Years went and I did a degree in English Literature. I went on to work in theatre as a technician and director. I wanted to return to study something and I was torn between computing and music technology. In the end I did a MSc in IT Software and Systems, because I really wanted a broad knowledge. I had no clear idea where it would take me. Though very challenging, I enjoyed the course and discovered the creativity involved in coding. My dissertation project related back to my undergraduate degree as I built an e-learning package for Old English. This is how I moved into the area of learning technology and I’ve worked in a number of universities since. I have done software development, but mostly it has been as a learning technologist and more recently as a lecturer.

WOMEN INTO TECH

LOUISE DRUMM

WOMEN INTO TECH

What does your role involve?

What I really enjoyed about being a learning technologist was that it involved both technical and the interpersonal skills. I would work closely with an academic to help them realise their ideas for how they wanted to teach online. This would require training them in the use of some tools or platforms, but also in depth conversations about how their students learn, how they teach their subject and what technologies can bring to these activities. Other times I would be trouble-shooting issues with the systems, or more commonly, user mistakes.

There were opportunities to develop my skills in certain areas, such as design or multimedia. It has also been an area with lots of change, so there are always new platforms and developments to make things interesting. When I moved into a lecturing role, I could bring a lot of that on-the-job knowledge to my research and teaching, as I now run the MSc in Blended and Online Education. I really like working in a university as I get to meet and work with people who work in lots of different areas and there are opportunities for continuing professional development.

What advice would you offer?

The market for learning technologists is very competitive since the pandemic and there are now more opportunities to specialise or move into management roles. It's good to keep an open mind about where you might go and where development opportunities might lead you to. It is also good to feel connected and true to what is important to you. I know that as an undergraduate student I was not as engaged or successful as I could have been, so I'm always mindful that the work I do might be helping other under confident learners be reach their potential.

CELIA IGREJA

"If you are curious and you are open to continually challenge your current knowledge, a role in technology is for you."

Tell us a little about your work?

I work for Forestry and Land Scotland as a Geographical Information Systems Development Manager. My role involves identifying the best technology to meet the requirements of the business processes, to decide how we collect and manage our data.

What I love about my job is that I am constantly learning and developing new skills. We have to work with a number of different applications, which are constantly changing and upgrading. Being on top of the changes helps me identify how the technology can best benefit the business needs.

On the other hand, I need to have a good insight of the business and its processes in order to marry the best tool to the process. This requires working with a wide range of topics and this makes the job varied and exciting, as every day is different. I enjoy working with other people and help them finding the best solutions for their needs/problems.

WOMEN INTO TECH

CELIA IGREJA

WOMEN INTO TECH

How did you find your way into tech?

During my graduate studies I developed a particular interest in GIS technology and its applications to environmental science. What I find fascinating about working in GIS technology is how it can help day-to-day processes/workflows as well as answering wider questions of any discipline.

What interests you about it?

The most fascinating thing is how, in one undertaking, you can tackle inefficiencies (automating processes), gather large amounts of data and analyse/prepare different outcomes that help shape people's views and perceptions that aid more informed decision-making.

What advice would you offer?

If you are curious, enjoy working with other people to help them find technical solutions for their needs / problems, and you are open to continually challenge your current knowledge, a role in technology is for you.

WOMEN INTO TECH

HANNAH JACK

"I think the beauty of Data Science is there is no limit on what you can do, and you can explore any interest using Data Science."

How did you find your way into tech?

My journey in becoming interested in tech is not one I expected. I currently work as a Management Information and Workflow Analyst within the financial services, a sector I have worked in for almost 9 years. I started off at the age of 19 as a Customer Service Agent. To allow me to be as efficient as possible, I gradually taught myself Excel at an advanced level to allow me to build workbooks, so I could do my job easier and quicker. This has been vital in my career progression and really helped me stand out in the crowd.

I have also always been very inquisitive when it comes to understanding how things work, so straight away I started looking into how different sources of information spoke to different applications. This became a bit of a hobby for me. In my current employment, I was involved in integrating an API to support the sourcing and assessing of customer information and the exposure to this ignited more need to understand how it all worked.

I began looking into courses I could do in my spare time starting with some programming languages. This never felt like work to me and was, and still is, something I really enjoy. I thought this would always just be something I did in my spare time to enhance my skills for work but to my delight, through Skills Development Scotland, I have been able to study at degree level whilst integrating this into my current job.

WOMEN INTO TECH

HANNAH JACK

WOMEN INTO TECH

Tell us a little about your course?

I am doing a Data Science course at Stirling University. This involves me working four days a week and having one day of online university. The course so far has already taught me so much, including things I never expected to be thinking about during a Data Science course. When completing an assignment covering Social and Professional Issues there were areas of accessibility I had never considered. I found this very thought provoking, to the point I have adjusted the presentations I deliver in my full-time job.

The programming side of the course is something I really enjoy. I am still at the stage where my code rarely works first time, but all the fun is understanding why this isn't working and challenging yourself to keep going until it does. There is always help at hand and everyone involved is so passionate about Data Science that you always learn something new every conversation you have whilst feeling inspired.

What interests you about tech?

When I originally started my course all my interests and ambitions were in understanding APIs within the Fin Tech arena. I used to think about data and think about businesses and finance. In a short period of time I have heard about some amazing social studies, including studies around depression and around supporting the elderly to keep as much independence as possible, using data and programming. I find these studies inspirational and it makes me proud that the course I am studying could lead me to being involved in creating something that helps improve quality of life for people who need it and really make a difference.

What advice would you offer?

When I left high school, I went to university to study Chemical Engineering because I always did well in maths, physics, and chemistry. After my first year I dropped out as I didn't feel as if the course suited me and didn't enjoy what I was learning. I was never really into computers or coding, so if you were to tell 18-year-old me I would be working in the area I work now whilst studying Data Science, I probably would have laughed then had a moment of fear. If I knew what I know now, I would have got into Computing and Data Science as early as I possibly could have.

I think the beauty of Data Science is there is no limit on what you can do, and you can explore any interest using Data Science. The content and assignments really speak to my love of problem solving. The course itself is so well structured that you don't have to be code savvy to be successful and the four years is about building your knowledge constantly in harmony so that you never stop using something you've learned in the different semesters.

AMANDA KELLY

"My advice for anyone who isn't sure if a STEM career is for them, or if they can do it is to give it a try. Accept any help and learn from experts around you. "

How did you find your way into tech?

My post-school career started in a contact centre, from where I moved to a marketing role and was lucky enough to complete a professional certificate in management which helped me fall back in love with study.

My course tutor suggested I look into a 6Sigma qualification and that is where my love of data began. I have always been interested in 'why' things happen and understanding that data was a great way to get to the root cause made me want to learn to pull my own data, I learned to code and from there my interest in coding, data warehousing, and databases was born.

Building a strong data culture is a gateway to making meaningful change to help improve any organisation and it starts with a tiny piece of code.

WOMEN INTO TECH

AMANDA KELLY

WOMEN INTO TECH

Tell us a little about your work?

I guess you could call me an unlikely analyst. I always thought my career would be focused on languages and books; when I was little I wanted to be a librarian and have always been happiest when surrounded by books.

In high school my grades weren't high enough to allow me to sit Higher Maths – which I now find funny because it's something that forms a key part of my role every day.

I studied English at university and my careers officer at school had pointed me towards nursing and teaching as potential professions, which maybe says more about the bias or opinions back then than it does about me.

What advice would you offer?

My advice for anyone who isn't sure if a STEM career is for them, or if they can do it, is to give it a try. Accept any help and learn from experts around you.

Never let anyone tell you can't do it, with enough effort and hard work, you can do anything.

I suffer frequently from imposter syndrome, but then I remember they (teachers) told me I wasn't smart enough to do maths, and I proved them wrong. So can you.

GEMMA MACKINTOSH

"...Building up new skills from scratch is hard, but that's not a reason to avoid it – it's a reason to give yourself time to make mistakes"

How did you find your way into tech?

I started out studying undergraduate psychology at university, then followed up with a PhD in a related field, which was a very slow-drip introduction to data and statistics. I only really got into R coding during my PhD, and despite the challenges associated with being self-taught, I enjoyed the problem-solving. This is primarily what pushed me to pursue a career in data science, as opposed to continuing with academia.

I'd actually been interested in working with the emergency services from a really young age. However, I'd always been concerned about my capability when it comes to the operational side of things, and my strengths were always more suited to a support role. I joined the Scottish Fire and Rescue Service (SFRS) around 10 months ago as a Data Services Developer, which couldn't have been a more exciting introduction to data science and business intelligence in the public service.

I work in a close-knit team focusing on data management, quality assurance, and delivery of high-quality products that make the data useful, both for others in the service and a wider audience. I've had some amazing opportunities to use and advance my skills in R, and I've even picked up some new skills in SQL and PowerBI. Recently I even had the opportunity to explore more complex data modelling, and I really look forward to adding this to my repertoire.

WOMEN INTO TECH

GEMMA MACKINTOSH

WOMEN INTO TECH

On being a Woman in Tech

It's no secret that there are barriers for women when it comes to 'making it' in tech, however, my experience with SFRS has been incredibly positive in this regard. A lot of women, myself included, feel, or at some time have felt as though a higher level of drive and ambition is required, and that there is a real danger of being seen as 'difficult' when pushing boundaries that need to be pushed. I like to think that any truth in this is becoming a thing of the past, and I strongly believe that women are becoming more respected in the tech industry.

Something really special about working in tech is the speed at which it progresses – both globally and locally. I honestly couldn't say for certain what I'll be doing this time in 10 years, but I know it'll be something exciting, perhaps even something that doesn't exist yet. The ability to say "I contributed to this advancement" is something that draws a lot of people into this industry, and it's certainly a huge perk of the job. Even your smallest achievement of the day could be something that's never been done by anyone in the world before you. I'm grateful that this previously male-dominated industry now gives women like myself the opportunity to experience this.

What advice would you offer?

Building up new skills from scratch is hard, but that's not a reason to avoid it – it's a reason to give yourself time to make mistakes. It's easy to compare your skills to others' but take the opportunity to learn from them rather than criticising your own skills. Some of my best memories are solving complex code problems with my PhD cohort, many of whom picked up the joy of coding much earlier than I did. I'm glad I used their passion to build up my own.

And don’t be afraid of changing your path, because there's lots of different avenues for tech roles, and if the one you're on doesn't feel right for whatever reason, another certainly will!

MAIRI MACDONALD

"I guess I would say don't count yourself out, and don't be afraid to jump; I didn't have a clue I'd be going down this route only six months ago."

How did you find your way into tech?

I only began to consider a career in tech relatively recently. I was a strong student in school and stepped on the 'get into medicine' conveyor belt pretty early, though I quickly realised at uni that it was not for me. I really struggled to pinpoint an alternative degree that matched my proficiency in maths and science with my interests in social change and human behaviour. Later at 25, I was waiting to start a social science degree and was parenting my two-year-old twins, when I realised that my childcare costs would be too prohibitively expensive to allow me to undertake a traditional degree.

I started to read about applications of machine learning and soon recognised that data science does not stand alone but has application in all fields, and for someone with broad interests this really appealed to me. In an ideal world I see myself working at the intersection of computer science, social science, and psychology; using practical, hard science tools to understand and design interventions for social problems. I'm also very interested in data ethics. Growing up in rural Scotland I had very little exposure to what the possibilities in tech might be and assumed it would be too complicated and very dry - the opposite, I now realise, is true.

In order to step into tech I looked for graduate apprenticeships. One opportunity in my area grabbed me: a position in the Improvement Service. A little over a month later I began my BSc in Data Science through the University of Stirling while working four days a week as a trainee data scientist with the Improvement Service.

WOMEN INTO TECH

MAIRI MACDONALD

WOMEN INTO TECH

What do you like about your course?

Obviously the earn and learn opportunity is very secure and has made further education viable to me, but also it is very valuable to see real-world applications of the degree in my job every week. It can put the more abstract aspects of the course into context. As an adult learner, I have better time management skills and can manage work and study simultaneously.

I'll be graduating at 29, but with four years' work experience. Having experienced university before, I can also say that remote learning suits me very well. I can learn and study very flexibly around my job and childcare, and content delivery is engaging and stimulating. The faculty at Stirling are very supportive and approachable, particularly so for the GA cohort.

What advice would you offer?

It took me long enough to be able to point to a career and think 'that one is for me', and then was fortunate enough to stumble on a pathway soon after – that is half the battle I think, and one that many people struggle with. I was beginning to feel like I'd 'missed my chance' and was frustrated at the pressure put on me to misguidedly pick a future at a young age. Starting something completely new at 25 as a parent of young children seemed a bit mad, but it was a brilliant decision and I'm certainly not alone; I study with peers 20 years my senior.

I guess I would say don't count yourself out, and don't be afraid to jump: I didn't have a clue I'd be going down this route (or even that I'd be good at it) only six months ago. There is plenty of room in this industry for the most niche of interests, and it is so important that the sector includes diverse minds and voices so that human bias is not built into data science. I'm still slightly amused that I 'work in tech' because it's not what family or friends expect from me, but I now find I am excited and almost impatient to study, and I've had a very successful start.

AMELIA OLSSON ROBBIE

"The most exciting thing for me is the challenge.
Nothing stands still."

What does your current role involve?

I'm the Asset and Configuration Manager for the Chief Digital Office in the Scottish Government, looking after all the assets — hardware and software — within Social Security Scotland. It's a new post, we're creating all the policy documents and profiles of what we're going to be doing, from development to hosting.

What do you enjoy about your role?

The most exciting thing for me is the challenge. Nothing stands still. There's a lot of plate-spinning. But you're always learning about what happens here and what happens there and about what each team is using something for and how that all fits together. It's like a sort of giant jigsaw puzzle, really. And as soon as you think you've done the jigsaw, because you're working in tech, there's something new and something changes and the whole landscape shifts. It's always: How can we make things better? How can we use this? I've got very clear things that I'm meant to be trying to achieve, but it's never going to be the same day twice, which is good.

I've had so much support from my line manager, from my team, the people around me, to be able to learn more and develop in a way that I want to, the things that I find interesting. I've been able to develop a couple of avenues that I want to pursue, which has been really helpful.

WOMEN INTO TECH

AMELIA OLSSON ROBBIE

WOMEN INTO TECH

What would be useful to support women in tech?

I had a baby last year and everything around the maternity leave and coming back to work, and making sure that situation was comfortable for me, was really, really supportive. When you're coming back from time away, especially in an atmosphere like tech where everyday is a learning day and everything changes, you feel like you've been out of the loop for so long, and it's quite challenging, quite fast-paced, and you get nervous. But we had a discussion about what would work best for everyone, rather than me having to feel like I was making difficult adjustments, and now I work compressed hours and get an extra day off to be able to spend time with my daughter. They were really keen to let me know that they were welcoming me back; they were really keen for me to come back and there was lots for me to do and lots of opportunities. So that was critical for me.

Also, having an atmosphere where you can get additional support and training — because if you have taken time out, you're concerned about your performance. I think it is a slightly more female trait to not necessarily have the same level of confidence and to want to make sure that you are absolutely nailing every thing that you're given and you can prove you're doing just as well as everybody else. I have been really encouraged to seek promotion opportunities. I've been encouraged to push myself, to write up everything that I'm doing and realise how much I've achieved. My manager is great at helping me consider what more I can actually do and thinking about where I want to go. I think having an atmosphere that feels more encouraging, rather than driven, has really helped.

And encourage girls to consider careers in tech?

I think that the way we consider Tech can be quite off-putting. Tech can seem like a monolith, even just what that word encompasses, so I would try to break it down a bit — think about how you use technology and what it can do for you. And just be curious, try to find out a little bit more about it, because there's so much you can do with it, it's fascinating. There will be something out there, in technology, that can either massively support you or it can be something that's really, really exciting. There's actually something really creative about it, in some ways.

How did you get into tech?

I was working for an education consultancy and the company underwent a refresh. They were looking into technical applications to support them in what they were doing. And I got heavily involved in that and started to do a lot more project management and technical project management. And then transferred over to doing project coordination for the Scottish Government. So, my technical background was initially self-taught and taught on the job. My degree was in French and Spanish: coding, technology, it's a language. It's all about systems and how things get put together.

KRIS PLUM

"…. there's no better feeling than seeing your code work or learning new avenues of technology"

How did you find your way into tech?

I have recently been hired as a data analytics and visualisation consultant. I started my undergraduate studies in Literature, German and French. A year later I dropped out and travelled for two and half years. I then went back and completed my undergraduate degree in English Literature. Thereafter, I worked my way from a temporary worker in a digital marketing company to being a full-time Media Strategist and then worked my way into a social media marketing/search engine marketing position. It was in this role that I developed a love of technology and data. This role introduced me to the world of technology, specifically web development. I had only known of web development as hardcore coding, but it was through understanding how a web page ranked and the importance of how a website was developed for google ranking that I began to be aware of the simplicity and creativity of web development.

In this time, I had also made a female friend who was a software engineer. I remember asking her how she got into such a role. She told me she had an undergraduate degree in dance and was previously a ballet dancer and that her dad was the one who taught her code. She then told me how anyone could code and that she was trying to get into UX design. It was then that I decided that the intricate world of tech would be for me but not then as I decided to go and travel abroad for another 3 years.

I went and travelled, found my now partner and decided to pursue a career in tech. I searched for a university that would offer a master's in computing but one that would provide training in web development and UX. The university that I found was Edinburgh Napier University which offered the diverse program I was looking for and had the permaculture Lionsgate. I was extremely intrigued by the Lionsgate project as I had spent years while travelling working on organic permaculture farms. The permaculture Lionsgate is a project that combines sustainability and technology. The Lionsgate sounded like an absolute dream as my sole reason for getting involved in technology is it has the biggest potential for assisting the climate emergency and reversing global warming.

WOMEN INTO TECH

KRIS PLUM

WOMEN INTO TECH

What does your role involve?

From what I've understood of the job duties and through my discussion with my future managers, it seems that the role will involve a lot of data analysis. What I'm most looking forward to is working on big projects that will influence stakeholders to make important infrastructure decisions. I've also been informed that I will learn how to calculate carbon emissions for each infrastructure project. Thereby, being able to help influence stakeholders to make positive decisions based on the data.

Essentially this role involves the use of data to encourage positive infrastructural growth..

What advice would you offer?

I think you should try a diverse range of tech courses as you would be surprised as to what aspects of technology you find interesting. Computing is an extremely rewarding degree and there's no better feeling than seeing your code work or learning new avenues of technology.

In terms of gender imbalance on the course I personally didn't have this experience on my course as my program was very international, which I absolutely loved. Although any of the boys that I worked with on my course seemed just as lost as I was, which made me feel much better as it put this stereotype of boys being more tech savvy to bed as I clearly saw that it wasn't true. I feel that even if it had been more male than female, I think you would be surprised to learn that everyone is learning together.

MONICA RICHARDSON

”...it helps to be a creative-minded person – you’re building things that have never been built before..... ”

WOMEN INTO TECH

How did you find your way into tech?

I'm a Delivery Team Lead with a company called Forrit. Previously I was a graduate apprentice web developer. What you do as a developer depends greatly on the company that you work for and the type of development that you specialise in. In my role at Forrit at the moment, I build websites. I think if I had known, when I was younger, what being a developer was, what it involved on a day-to-day basis, I would have known a lot sooner that that's what I wanted to do. It wasn't until I was about 15 years’ old, and I did a week of work experience at a web development company, I got to meet developers and talk to them about what they were working on. That's when I realised, this is very cool. This is something I'm interested in.

Before that I think the only thing, I knew about being a developer was something that my friend at school had told me. He said that you needed to be really, really good at maths. I was not great. So that didn't fill me with confidence. Since then, I've learned that some of the problem-solving skills that you learn in maths can be helpful as a developer, but it's certainly not a requirement and in fact, a lot of the developers I know say themselves that they are actually not great of maths. When I was in school, my favourite subjects included French, art and music; and you might think that they have nothing to do with tech. But I think there are lots of transferable skills. You'd be surprised how similar learning human language is to learning a computer programming language. And I think it helps to be creative minded when you're building things that sometimes have never been built before it.

MONICA RICHARDSON

WOMEN INTO TECH

What does your role involve?

One of the common misconceptions about developers is that we spend all our time in front of computers, and we don't speak to anybody ever. I know what we do is write code but actually, I would say on a daily basis it's more like 50/50: you spend half of your time writing code and half of your time working with people, for example, figuring out what people want a piece of software or web site or an application to do. And finding how you're going to work together to achieve it so there's more to it than just writing code.

There's a lot of working with people as well. Obviously now, because of the pandemic everyone is working from home. So, at the moment I get to work at home every day, but in the office, it's just generally a pretty laid-back fun place to be. And I get to work with some really fun forward-thinking teams of people.

Some of the highlights of my last 4 years have included a trip I got to go on last January to Microsoft headquarters in Seattle, America, which was incredible. A dream come true. Last year, I also got the opportunity to go down to Westminster to the houses of parliament to talk to about the importance of apprenticeships like mine.

What advice would you offer?

There is more than one path to your dream job. You have to focus on how you learn best and pick the path that works best for you. I've worked with so many people that have come from a variety of backgrounds, there's no one right path into development. If you're a creative minded person, if you enjoy problem solving and the sound of being part of the construction of technology that literally changes the world excites you then I strongly recommend a career in tech.

What did you enjoy about your course?

When I finished high school, I did go to university, but I realised after a year that it wasn't for me. I dropped out and got the opportunity to become a graduate apprentice web developer at Forrit. Everyone has different ways that they learn best, but for me, this was the perfect opportunity. It meant that I could learn 4 days a week on the job doing things practically, surrounded by experienced professionals that could help me in my learning, but it also meant that one day a week I could attend classes at university and apply that learning into the work I was doing every day.

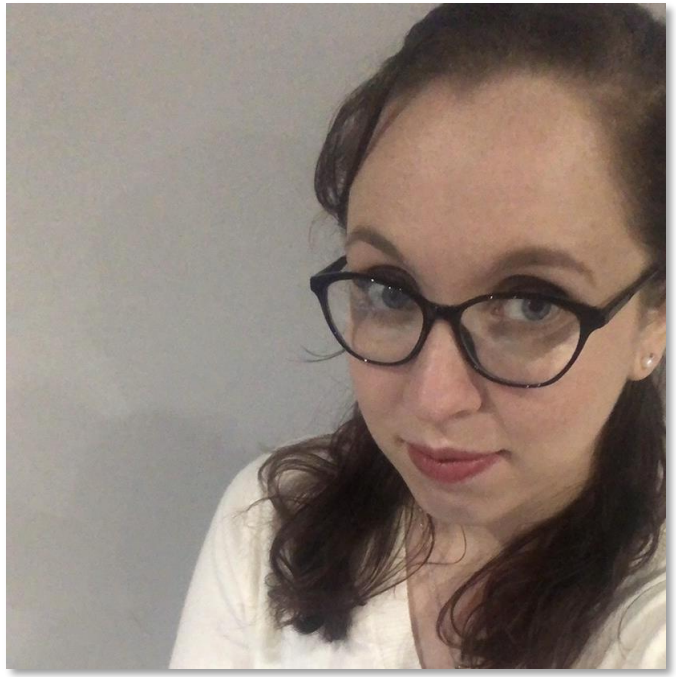
CELIN REILLY

"Not everyone learns in the same way so explore every avenue to find what works for you!"

How did you find your way into tech?

I originally studied at the University of Stirling for a Diploma of Higher Education in Mathematics and its applications, where I was introduced to some of the technology and techniques found in data science and statistical study. This piqued my interest in a way that other branches of Mathematics did not.

From there I followed articles and had a curiosity for how the statistics we are shown are created. While living in France, a close friend informed me that there was an opening for a Graduate Apprentice in Data Science at Caledonia Housing Association and encouraged me to apply. Following the application and interview process, I find myself on an excellent course and work with wonderful people who have a passion for data and technology.



WOMEN INTO TECH

CELIN REILLY

WOMEN INTO TECH

What does your work involve?

My role currently involves assisting the Strategy and Improvement team at Caledonia HA by using and applying the skills I develop both in class, and through experience and work with the Business Analyst. This could be anything from uploading and collecting the results of an online survey, to helping gather and cleanse data requested from a Neighbourhood Officer.

It is a varied role, with a lot of room for growth and support, with great emphasis on improvement for the team, staff, tenants, and the business overall. I am encouraged to use my classwork to improve processes, systems, and reports that we already have in place.

What do you enjoy about your work?

I truly enjoy the ability to work and learn with an amazing group of people in a variety of fields with a common objective. I have become very good friends with everyone on my course and this allows me to bounce ideas between them and solve problems with new points of view. I also love how I am given freedom to apply the lessons we are taught in class to my work and vice-versa. This allows me to develop my own knowledge with the ability to see exactly how the things we learn in class are acted upon in a real world setting.

What advice would you offer?

Be curious, and seek to explore how the statistics we are shown are actually created. It can be a difficult route at times, but hugely rewarding. I have found excellent friends on my course and I work with an incredible group of women who share my passion for data. Do not allow others to discourage you from personal development, and take every feasible opportunity to explore and develop your skills. Not everyone learns in the same way so explore every avenue to find what works for you!

WOMEN INTO TECH

MEGAN REUTIN

"Every single role is technology-related in some way, shape or form whether: you're reliant upon technology to support your role; or you're pioneering the creation of technology itself "

How did you find your way into tech?

I have always been passionate about a variety of different things, each of these not necessarily tech-related - and that's an important thing to remember – these interests, when combined together, led me to where I am today:

- A **desire to learn,** in general, using technology from a young age (e.g. French games on the PC to learn phrases to help me when on holiday, designing CD covers in high school using limited drawing packages
- An interest in learning **how things work** in general
- A **loathing of bad customer experience**, **bad user design, and rotten customer journeys**
- A bit of a **creative streak** and a **love of designing** things (from clothes to interior decoration)
- An **eye for detail**, whether through selecting an ideal landscape position for a photo shot or noticing that digital visuals were just a little off-centre / too high / not the right shade
- And a **yearning to fight the norm**

Interestingly, to combine all of these I fell firstly into website design / game design & creation, then application design & building (think Matrix / CSI swipe touch screens), then I stumbled upon the beginnings of what was to become the Social Media wave, landing firmly in the exciting realm of data, analytics & insights, handling strategically every type of data you can imagine!

WOMEN INTO TECH

MEGAN REUTIN

WOMEN INTO TECH

What does your role involve?

I'm the **Global Head of Data Science & Strategy** for **Grünenthal**, a pharmaceutical company focusing on pain management and related diseases.

The role itself ranges from the definition of business strategy to the implementation of everything that entails: initiative roadmap creation, process definition, platform technology, the governance of it all, but most importantly is the exciting possibility of **using Data Science to get the data to talk,** ensuring that our business is truly data-driven in all decisions made.

As well as having a business-facing focus, there is also a **market-facing focus,** meaning that it's my responsibility to keep up with the latest trends, understand what's happening across industries in terms of data, and keep my ear to the floor for **exciting developments** as well as looking at **potential opportunities for partnerships.**

My previous role involved testing out **bleeding-edge technologies** so I love to find new ways in which we can innovate, whilst also combatting things like **data bias**, ensuring that solutions are built responsibly – **ethical / responsible AI is a huge interest of mine** and it's imperative that everyone plays a role in ensuring technology is responsibly built **to ensure existing stereotypes & bias are quashed and not emphasised further** through technology.

What advice would you offer?

Create your own path forward – there are so many exciting roles to choose from, some which won't even exist today: my role didn't exist when I was in school, or even in University!

Also, **do not be put off by stereotypes** – I think I've came up against (and thrown out!) every stereotype humanly possible!

Every single role is technology-related in some way, shape or form, whether you're reliant upon technology to support your role, or you're pioneering the creation of technology itself.

What did you enjoy about your education?

I absolutely loved being able to explore things and get creative whilst learning. It's **opened the doors to many possibilities**.

Don't be afraid to throw yourself into any opportunities that arise, even if completely outwith your comfort zone – one of the best early opportunities I had (despite it being a bit scary!) was the possibility to extend the council's employee portal as part of my Master's degree – **such a great experience** and I'm still, to this day, in contact with the person who was my boss back then!

RACHAEL WOODS

"While understanding the fundamentals can help, it is absolutely not a hard requirement to have a successful and rewarding career in tech."

How did you find your way into tech?

I've always been fascinated by science and knew from a very young age I would want to go into a STEM career. Science and maths were always at the forefront of my studies, and from the age of 15 I was working for my dad's business as a database administrator. I found it boring at the time, but looking back it really helped me get to where I am today.

It wasn't until I was in the 3rd year of my undergrad degree that I really found a passion for data and data science – going through a module on using RStudio and its scripting language to do my analytics work sparked such a keen interest that I was genuinely sad when the class came to an end!

This then led me towards my MSc qualification, where I specialized in data science, and then into my first full-time job as a Junior Data Analyst within the games industry. I now work as a Business Analyst in the social housing sector, and I still have the keen passion for RStudio that I had back in 2015!

WOMEN INTO TECH

RACHAEL WOODS

WOMEN INTO TECH

Tell us a little about your course?

I initially completed my BSc (Hons) in Animal Biology in 2016 at Stirling University. My original plan of going into Veterinary Medicine had fallen by the wayside, so I ended up taking a year out and working while I decided my next steps. Upon reflection, I decided I really enjoyed working in data science, and so I completed my MSc in Information Science with a specialty in Data Science at Northumbria University in 2018.

Since then, I've gone on to complete various other courses through work and in my spare time including learning Python, Power BI, and Advanced Data Visualisation. Now within my current job in the social housing sector, I am working towards a Level 4 HNC in Housing, which I hope to achieve by the end of 2022.

What interests you about tech?

In my work life, some of my particular tech interests include Automation Processes, Data Visualisation, and Predictive Analysis. Basically, the more efficient I can make something, the happier I am! Outside of work, I am a keen gamer and have been ever since the Gameboy Colour was the console to have. I even took the plunge and built my own PC during the first lockdown, which was a challenging but really fun experience!

What advice would you offer?

I think the biggest misconception when it comes to data science, and tech in general, is that you have to be a maths genius to be able to do it. Fun fact: I was so bad at maths as a kid that I had a tutor for 10 years! While understanding the fundamentals to a range of mathematical principles can help, it is absolutely not a hard requirement to have a successful and rewarding career in tech.

There are also so many transferrable skills that you don't need to commit yourself to science and technology courses for your education. This can include skills such as problem solving, creative thinking, critical thinking, and attention to detail. Having good communication skills is also highly beneficial, as you will often be collaborating with a range of people across multiple teams and disciplines.

WOMEN INTO TECH

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