

PATRICK LEE

Final Year MEng Computer Science Student
Projected First Class Hons.
Due to Graduate Summer 2024

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SUMMARY

Self-directed and adaptable final year student with a solid background in Computer Science fundamentals, data structures and algorithms, with later specialism in more applied areas such as security, machine learning and computational neuroscience.

Currently looking for a software developer role, particularly at a startup where I can use my skills to really impact an exciting project.

SKILLS

Languages:

C, Javascript/Typescript, Python, PostgreSQL, React Native, Vue JS, PHP, Symfony, C++, Go, Julia

Technologies: AWS, Docker, Git

EXPERIENCE

7/2023 – present	Research Assistant & Software Engineer	University of Bristol
Python, Kotlin Typescript React Native	<ul style="list-style-type: none">Successfully added features to experimental neuroscience software, increasing the operational intensity without increasing its runtime.Designed and implemented mobile app which, operated via a UI, uses audio-based hardware to provide stimulation as part of experimental treatment for Dystonia.Used patient feedback and data to improve the design and features of this app.	
	github.com/peafischer/EEGVIBE-dev	github.com/peafischer/stop-dystonia-app

PROJECTS

Web App PHP, Typescript, PostgreSQL, AWS	QR/Landing Page Management Platform (Independent)	github.com/patrick1ee/keypin-web
	Built the full end-to-end application from the ground up as part of a small start-up team, also undertaking other roles such as design and market research. A company acting as a tester recorded over 700 interactions with their page which they had created using our platform, placing the generated QR codes on some of their product packaging.	
Cybersecurity C, Python	AES Power Analysis Attacks & Countermeasures (Course)	github.com/patrick1ee/AttackHW
	Developed AES encryption firmware for a micro-controller and created an efficient key recovery attack against it, revising to give a 10x speed increase on the initial version. Implemented successful countermeasures for this attack, with consideration of device constraints. I also wrote a specification considering further threats and counter-measures for other functionality required for TLS communication.	
Cybersecurity Assembly, Python	ROP Shellcode Compiler For Antivirus Evasion (Course)	github.com/patrick1ee/CROPgadget
	Group project in which we successfully built a tool that can take certain Shellcodes and compile them into a ROPchain exploit, given a binary vulnerable to buffer overflow, bypassing defences such as executable space protection, code signing and ASLR. We wrote a report evaluating our work and presenting research on possible countermeasures.	

EDUCATION

9/2020 – present	MEng Computer Science (projected First Class Hons.)	University of Bristol
	Specialising in Security, Machine Learning & Computational Neuroscience/AI	
9/2012 – 8/2019	A-Level Maths, Computing, Physics & Further Maths at grades A*AAB	The Grange School
	9 GCSEs at grades A*/9 and 1 at grade 7	

EMPLOYMENT

8/2021 – present	Club/Events DJ	Truth Tribe Ltd.	5/2022 – 8/2022	Front of House	Brewhouse & Kitchen
4/2020 – 8/2020	Warehouse Picker	Morrisons	2/2020 – 4/2020	Security	Moe Joe's Nightclub
11/2019 – 4/2020	Ski Instructor	Vail Resorts	9/2019 – 11/2019	Factory Worker	Robert's Bakery
9/2019 – 11/2019	Maths Tutor	Self-employed	4/2017 – 9/2019	Lifeguard/Instructor	Manley Mere

HOBBIES/INTERESTS

I've always been a keen musician, playing both piano and saxophone to grades 5 and 7 respectively. In recent years I've worked as a DJ and event organiser as part of a collective started with friends from University, and this in turn has led to a recent interest in the development and modification of both music production software and hardware. This tied in well with my third year group project in which building a drum MIDI controller was a key aspect.

I also enjoy all things fitness related, from my captaincy of the rowing team during school and expeditions as part of the Duke of Edinburgh award to mountaineering and ski touring, developed from my time spent teaching skiing in Whistler.