JOSEPH HODGES

software engineer

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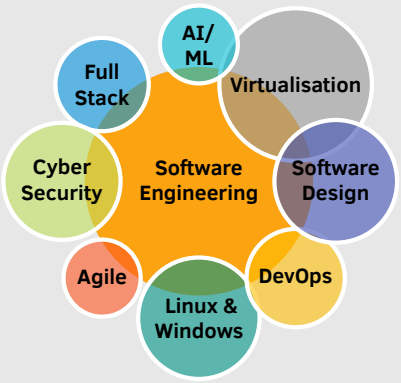
Skills



Programming

Python • Bash • Java

Ansible • SQL

RESTful • Linux Kernel • RHEL

C# • Ruby • F#

HTML5 • CSS • Bootstrap • LaTeX

GoLang • C++

React Native • React Js

Android • Flutter • .NET

Projects

Honours Project - Genetic Algorithms for Community Detection in Social Networks

L0veHeart - A Battle Royale approach to online dating utilizing mysql database, ASP.NET MVC, and flutter

Kaggle: Various Kaggle Data science and Machine Learning competitions

Honours Software Engineering Graduate with 2 years experience looking for next challenge. Motivated and eager to learn with experience at all stages of the software. development lifecycle

Education - BE (Hons) Software Engineering

2019 - Present

Victoria University of Wellington - *GPA: A-*

- AI and ML Techniques
- Software Design
- Network and Cloud Computing
- Cybersecurity and Malware Analysis
- Full Stack Development
- Project Architecture

Graduating Nov 2022

Awards

2019 Deans List for Academic Excellence

2021 Student Body Representative for Professional Engineering, Software Correctness, and Organisational Security

Volunteering

Engineering/Computer Science Faculty Outreach Programmme

Pasifika Group Mentoring Programme

Experience

NZX Limited — **Automation Engineer**

Nov 2021 - Present

Wellington | Part Time

Project

- Designed, Implemented and supported an Automation Framework to run regression and integration testing
- Developed CI/CD pipelines to ensure code quality organisation wide.
- Developed, deployed and supported scripts used through the business for critical day to day operations
- Migrated Oracle database to Postgres
- Relied upon to assist junior staff with their training and upskilling

Tools

- Postgres
- Argent (Job Scheduler)
- Vagrant
- Ansible
- Microservices
- GitHub CI / CD
- Linux Kernel

eAccounts Global — **Junior Developer**

Feb 2021 - Oct 2021

Auckland | Part Time

- Brought in at the start of the year to rebuild their helpdesk (migrating to a freshdesk system),
- Through personnel changes I became the defacto project manager and managed to see this project through to completion.
- API scripts for automating various day to day processes
- built internal CLI to call API scripts

Soft Skills

Fast learner | Stress management | Persistence | Team player | Communication skills | Openness to criticism | Love for challenge

Greatest Strength: Persistence - once I dig my teeth into a problem I will never give up.

Greatest Weakness: Persistence - it can can be difficult for me to take a step back.

Education

BEng (Hons) Majoring in Software Engineering – GPA: A- Victoria University of Wellington 2019 – 2022

AIML, Evolutionary Computing and Data Science

Artificial Intelligence and Machine Learning has always held a special intellectual fascination for me, and I have thoroughly enjoyed being able to study it at one of the foremost research universities in the southern hemisphere. I have been exposed to a wide variety of tools and techniques from neural networks to evolutionary computing – with my focus settling predominantly on the latter. My research here has transcended my course work and I am always on the look out for ways to learn more and apply it, be that in my spare time or professionally.

One area of particular interest has been in improving the efficiency, readability, and comprehension of these problems which I have taken to all areas of my software development. Additionally I have heavily developed my capabilities in terms of data analysis, as well as feature extraction and manipulation. These combined have ensured I understand the ins and outs of the python language and associated libraries, as well as exposing me to Golang.

Cyber Security and Networking

Cyber Security has been a significant focus of my academic career, investigating both the offensive and defensive side of this field, which has allowed me hands on experience in decompiling and reverse engineering malware.

Through this I have developed a deeper understanding around the importance of secure programming and organizations, as well as the preventative and responsive measures. It has also extensively improved my understanding of the Windows and Linux ecosystems, as well as how to ensure I am security conscious and proactive with regards to my online activity and development practices.

Software Development, Programming Languages, and Architecture

The Software Development process across all aspects of the SDLC has been the core component of my degree. This includes smaller software systems to gain familiarity with languages such as F, Ruby, and Rust, as well as medium and large projects to explore system architecture and correctness of safety critical systems – implementing these with a combination of languages with specific regard to their individual trade offs and relations.

Engineering and Professional Practice

The Engineering Component of my degree has been broad and encompassed Project Management as well as Academic research and professional projects with in-industry partners. Through this I have grown my collaboration, leadership, and communication skills, translating business requirements into user stories that can be actioned in an Agile environment, and then into a medium that can be communicated back to the business and others in the industry through reports and presentations.

Through this I have taken a diverse group of projects from inception to delivery, such as game development, novel approaches to Evolutionary Computing, and tooling to be used for Cyber Security Analysis.

Other

Throughout my university career I have attempted to make the most of the opportunities to learn presented to me. Through this I have extended my knowledge of networking and cloud computing to complement my work in Cyber Security, which has improved my familiarity with tools such as AWS to spin up and manage ec2 instances, as well as virtualization in general with a variety of Linux boxes from Ubuntu to Kali, as well as Windows.

I have also gleaned a basic understanding of creating and manipulating Computer Graphics in 2D and 3D space, writing simple programs in the Processing programming language. With this I have been able to reproduce a range of fundamental computer graphics algorithms as well as using vector and matrix representations to perform co-ordinate transformations. Fundamentally this has improved my understanding of Front End development and the implications design choices have on the human visual system.

I even briefly studied Popular Psychology over the summer of my first year to apply the scientific method in order to quickly learn subject matter I am unfamiliar with, and then present informed and critical opinions on that subject matter. This also helped me develop my critical thinking and communication skills by discussing my own ideas and providing feedback on others ideas. This course was also fully remote which helped develop my skills for autonomous learning. I found all of these skills immensely helpful when completing projects, both in terms of dealing with remote work during during the Covid pandemic and the general exchange of ideas this entailed.

I have also been awarded a position in the 2019 Deans list for academic excellence and was the 2021 Student body representative for Professional Engineering, Cyber Security, and Software Development.

Work Experience

Automation Engineering Intern (part time)

NZX Limited, Wellington | Nov 2021 – Date

Most of my work with NZX has been in the project planning and implementation of an automated regression test pack. This has predominantly meant working with python writing and testing methods to interact with an SQL database. Other responsibilities for this project have included setting up a GitHub actions runner on a Linux server (running red hat) to automatically run these tests, as well as debugging and patching test scripts to run in an automated environment.

I have also been called on to do work in the DevOps space, editing, testing, and deploying scripts across all environments across testing and production systems. Beyond simply becoming accustomed to building and configuring testing environments and virtual machines (such as vagrant), this has also rapidly improved my skills with scripting languages such as bash, as well as deployment tools like Argent, and job schedulers including cron and Argent.

This has also helped me build my ability to work in a team significantly, from basic communication skills involved in working on a project in a professional setting, to leadership skills in training more junior employees later in my tenure. I have also been able to apply and grow my skills working in an Agile team in a more professional environment.

Junior Developer (part time)

QONTRO, Auckland | Feb 2021 - Nov 2021

Initially brought on at the start of 2021 to assist in the migration of their internal helpdesk system to one utilizing the Freshdesk Suite, my responsibilities included automating the migration of a knowledge base as well as automation for ticket creation and an internal API to interact with the system.

Through Personnel changes I became the de facto project manager, seeing it from inception to hand over. Through this I not only learnt about interfacing with Enterprise software, RESTful APIs, and python development but also enhanced my presentation and communication skills, frequently and swiftly bringing new project leads up to speed on development, as well as personally presenting the project to the wider company. This was my first introduction to professional project management and is where I learnt the pitfalls of software development as well as how to operate in a professional Agile environment with tools such as Jira and Confluence.

University of Wellington Outreach Program and Pasifika Mentor Programme

2020 - 2022

My responsibilities here were multi-faceted, from the mentorship of more junior computer science students to running a lunch time code club at the local normal school, as well as representing the Engineering Faculty at events around Wellington, such as Armageddon. It was here that learnt to break down complicated concepts in a way that could be easily understandable by someone with limited, if any, technical knowledge, while still being comprehensive. One thing I specifically enjoyed was encouraging the curiosity and abilities of those I worked with, and then watching them flourish.

Extra-Curricular and Projects

I have actively engaged in Hackathons from 2014 where, as part of the Young innovators Delegation to Stanford we completed a 24 hour challenge which involved designing an app to promote sustainability and Environmental consciousness, and more recently I entered into a Maxis hackathon where my team and I designed an early warning system for tsunamis based on satellite imagery, as well as to predict its path to provide safe evacuation paths and insight for first responders. I have also entered into a few Kaggle Competitions to develop my data science and machine learning skills, such as the "Titanic – Machine Learning from disaster" competition for which I designed a regression algorithm to predict which traits of passengers were most helpful in their chances of survival, as well as one sponsored by my university which involved classifying the music genre of tracks based on unlabelled spotify data.

I have also worked on a few projects, such as my honours project – Genetic Algorithms for Community Detection in Social Networks – for which I used the sociological principle of social centres to improve the efficiency of community detection over large social networks, combining graph databases and Genetic Algorithms. For this work I hope to soon be published and has thoroughly enhanced my understanding of these concepts.

Outside of this I have also developed a number of apps such as an app to interface with smart lights (Illumin8), retrieve and display Spotify listening statistics (Spotistats) s, and a dating app that would gamify dating in a round robin style tournament (L0veheart). These have been incredibly helpful in improving my skills with mobile development frameworks, database management, and personal project management – both in motivating myself and others in a team without externally imposed deadlines.