Connor Mattson

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I am a third-year student studying a BE(Hons) in Engineering Science / BSc in Computer Science at the University of Auckland. I am interested in Software/Web Development, Data Science, Operations Research, and financial applications of mathematics/computing such as Quantitative Analysis.

Computers were introduced to me as a tool for people to use to make their lives easier. Looking into how computers do this, I began to search for other ways to simplify tasks. Eventually this led me to Engineering Science, a degree that focuses on developing mathematical models to minimise costs, maximise efficiency, and simulate outcomes to make the best possible decision.

Skills

Python, JavaScript, MATLAB, Git, HTML, CSS, C
Adaptive, Passionate about learning, Critical thinker

Education

BE(Hons) in Engineering Science / BSc in Computer Science, University of Auckland (2021)
6 x Certificate of Outstanding Achievement from HoD of Computer

NCEA Level 3 With Excellence, Saint Kentigern College (2016)
Proxime Accessit to the Dux (2016)
Saint Kentigern Scholarship (2016)
Headmaster's Award for contribution and service to the college and community (2016)
Top Academic's award (2015)
First in class – Computer Science (2013, 2014, 2015 and 2016)

Young Scholars Programme, University of Auckland (March 2016 – June 2016)
Cisco Certified Network Associate (CCNA) - Routing and Switching (2015)

Work Experience

Software Engineer Intern **2018 – present**
Rocket Lab Limited, Auckland
What started as a fixed term internship at Rocket Lab quickly became a permanent role working part-time during university semesters and full-time during breaks. At Rocket Lab I worked closely with the Production and Avionics teams, the applications I developed were primarily written in **Python**.
I was the lead developer on projects that have:

- Been deployed throughout the company both in New Zealand and The United States
- Decreased production time in their area by factors of more than 10
- Aided in certification and qualification by NASA

Lead Software Engineer **2019 – present**
Koios, Auckland
Koios is a team within the Auckland Programme for Space Systems; our aim is to increase interest in STEM at university by engaging students at a high school level using New Zealand built satellites. During weekends when I was not working or studying, I lead the design and development of the software required for APSS-3, a 1U CubeSat. Being such a small team, my work ranged from **embedded systems programming to front-end web development**.
I was responsible for all deliverables required of the Software team, including:

- Development and implementation of custom communications protocols
- The on-board computer, radio transmission system, battery management system, and attitude determination and control system
- Ground station transmission and control software
- Databases storing data retrieved from the satellite, APIs to access them, and a website making the data available to non-technical users

Relevant Personal Projects

A partial list of projects that I've worked on can be found at connormattson.github.io/projects, or on my GitHub: github.com/connormattson. I'm happy to discuss any of my past work.

Miscellaneous Scripts and Challenge Solutions
I love solving programming challenges or puzzles and competing in programming competitions. I keep a record of solutions and I'm working on documenting these and building them into a database. The majority of these solutions are written in **Python**.

Stock-Calc
A quantitative analysis tool which takes in data about a given security and generates random forests. The forests are used for predicting whether the closing price of that security will increase or decrease the following day. Stock-Calc is built in **C** and **R**, as well as utilising some **Python**.

Shielded
A prototype end-to-end encrypted messaging app demonstrating the ease at which standard such as **OpenPGP** can be implemented. The client and server were written in **Python**. Shielded was my first exposure to encryption, designing and implementing network protocols, and user authentication. I leant a huge amount from this project and it was a pleasure to work on.

Tyred – Summer of Tech Create Camp 2018
Simulating software development in a professional environment, Create Camp was a two-day hackathon in which teams were challenged to create apps that make use of New Zealand API. Using **HTML, CSS, and JavaScript,** my team created Tyred, which finds the most energy efficient route between two addresses. We were awarded prizes for the most hurdles overcome and the best collaboration.

Achievements

2017: 4th in the New Zealand Programming Contest (Tertiary Intermediate category)
2016: 10th in the New Zealand Programming Contest (School category)
2015: 4th in the New Zealand Junior Robocup (Premiere category)
2014: 2nd in the New Zealand Junior Robocup (Premiere category)
2013: 1st in the New Zealand Junior Robocup (Senior category)

A+	Programming Techniques (**Java**)	A+	Computer Science Fundamentals (**Python**)
A+	Modelling in Operations Research	A-	Algorithms and Data Structures
A	Introduction to Engineering Computation (**MATLAB** and **C**)	A	Computational Techniques and Computer Systems (**Python**)
A	Discrete Structures in Mathematics and Computer Science	A	Machine Learning

Club Memberships / Volunteering

2019 - 2019	Developers Society	Executive Team
2016 - 2016	Design Council	Founding Chairman
2016 - 2016	Scholars Group	Member
2014 - 2016	Python Programming Club	Student in Charge
2014 - 2015	Cisco Networking Academy	Student in Charge
2013 - 2015	Robotics Club	Student in Charge
2013 - 2015	Students in IT	Volunteer