Michael Fortune

Mechanical Engineer transitioning into Software & Data Engineering

Contact

Christchurch, New Zealand 📍

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Personal Website 🌐

GitHub 🐙

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Education

MSc, Environmental Design & Engineering, University College London

Completed 2016

BEng, Building Services Engineering, Northumbria University

Completed 2014

Self Learning

Provider	Course
Harvard	CS50X - Intro to CS
	CS50P - Intro to Python
AWS	Cloud Practitioner Essentials
Boots.dev	DSA in Python
Kaggle	Intro to Pandas
	Intro to Machine Learning
Hugging Face	AI Agents Foundations

Character Traits

Self motivated learner

Proactive & accountable team member

Good communicator of technical concepts (having led 10+ presentations to clients and internal teams)

Confident client facing demeanor

Summary

I am a Software and Data Engineer in transition, with a decade of experience as a Principal Sustainability Consultant and Mechanical Engineer at WSP. My engineering background gave me a deep understanding of systems engineering, energy modelling, and data-driven decision-making, while also honing my skills in technical report writing, client communication, and multidisciplinary collaboration.

Career highlights include delivering data centre cooling systems for a FAANG client, designing resilient cold-climate infrastructure for the Australian Antarctic Division and leading the development and teaching of WSP's building energy modelling standards for the New Zealand business. I was also humbled to receive internal awards for exemplary client management and international collaboration.

Motivated by a desire for a faster-paced day-to-day environment and learning new, technically challenging concepts, I began my transition into software by completing Harvard's CS50x Computer Science course. Since then, I have built a portfolio of projects spanning both software and data engineering, and I continue to expand my expertise through reinforcement of CS fundamentals, online courses, and hands-on development projects showcased on my GitHub and personal website.

I bring a blend of engineering rigour, data expertise, and software skills, making me well-positioned to contribute to teams working at the intersection of software, data engineering, and machine learning. My short-term goal is to apply my skills at production level, while contributing to innovative projects with a global impact. Long term, I aspire to become a technical expert in software and data engineering, influencing company design decisions and strategy in response to rapid technological change.

Skills

- Pythonista, with a good understanding of the Pandas, FastAPI, PyTest, Graphana and Streamlit libraries

- AWS - Experience with Cloud Console, Lambda functions, S3, Elastic Beanstalk

- zsh scripting for MacOSX and Linux systems

- Databases - Experience incorporating SQL and NoSQL solutions, with CRUD functionality in my projects

- Docker and Git including CI/CD pipelines

- Clear and concise written communication for report and documentation writing

- Project Management and Commercial leadership transferable to software development projects

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Work Experience

Position: Graduate to Senior Mechanical Engineer @ WSP (Bristol, UK)
Dates: September 2014 - 2019

- Enthusiastic team member privileged to work on WSP's high profile projects in the UK and abroad
- Trusted with a significant level of responsibility early on in my career
- Undertook a Master's degree part-time, sponsored by WSP. Alongside the new technical knowledge, I learnt how to manage many conflicting deadlines and responsibilities during this process
- Project highlights in these roles include:

<u>FAANG client - data centre sea water cooling system (Finland)</u>

Worked as part of a small team to design a seawater intake and forwarding station, providing additional cooling capacity for a planned data centre expansion. We coordinated with specialist suppliers and the client to deliver a robust, resilient design tailored to the challenges of a Nordic environment.

<u>UK National Holocaust Memorial</u>

Lead Mechanical Engineer on a high-profile, sensitive UK government project. Worked alongside prestigious architects and designers who challenged conventional practices, driving the development of innovative, bespoke engineering solutions across much of the project.

Position: Senior Mechanical Engineer to Principal Sustainability Consultant @ WSP (Christchurch, NZ)
Dates: September 2019 - 2024

- Lead engineer on multiple projects responsible for coordinating and collaborating with team members to complete deliverables within tight deadlines and predetermined budgets
- National technical lead in Building Energy Modelling, responsible for training graduates in the field
- Established strong working relationships with clients and our internal teams through regular communication and consistent expectation management
- Project highlights in these roles include:

<u>Australian Antarctic Division - new station master planning</u>

Mechanical design and energy modelling lead for the concept design of approximately 10 buildings on this project. To meet the demanding time frame, I coordinated a remote team while working directly with the client in Tasmania to interpret and deliver on their specific requirements.

<u>Luggate Hall</u>

Lead Mechanical Engineer on an ambitious project to deliver an ultra-low-energy building that challenged New Zealand's outdated building regulations. The result was the country's first certified commercial Passive House project.

<u>Nationwide School and Hospital Design</u>

Lead energy modelling engineer for multiple school and hospital projects across New Zealand. These models underwent rigorous peer review by the New Zealand Green Building Council to verify compliance with their stringent and highly specific requirements.

Personal Projects

<u>ICU Grow</u>

An IoT enabled automated greenhouse, designed for my garden.

<u>Money Pots</u>

An expenses and budget tracking tool designed for my year away travelling.

<u>Quantifying Energy Poverty in Chicago</u>

A study of open source data to practice my data science skills.