

Matthew Lake

☎ 0419 747 426 ✉ mgtlake@outlook.com 🌐 github.com/mgtlake 🔗 linkedin.com/in/mgtlake

Education

2014 – 2019 : Bachelor of Engineering (Software) & Bachelor of Arts (History, Mathematics)

University of Queensland, GPA: 6.49 / 7

2019 : UQ Computing Society management committee member.

2017 : Studied abroad at University College London on a UQ Exchange Scholarship.

Experience

2018 – 2019 : Amazon, Software Development Engineer Intern

Developed a library for API logging using **Spring Aspect-Oriented-Programming** and **Java** annotations. Built infrastructure to redact sensitive customer data, and designed blacklists adhering to internal Data Classification standards.

Worked on a high-availability **Java Spring** backend service managing on-site fulfilment of Amazon Fresh pickup orders. Tuned the **DynamoDB** database to support 10x scaling.

Designed algorithms for non-linear spatial location of RFID tags for a prototype smart warehouse.

Developed Chaos Engineering tools for **AWS Lambda**, using **Python** and **Node JS**.

First place in two internal hackathons, and second place in an internal algorithms contest.

2017 – 2019 : University of Queensland, Tutor

Prepared lessons, taught classes, and graded assessment. Student feedback rating of 4.86 / 5.

CSSE2002 'Programming in the Large' (3 Semesters)

Taught **OOP** design patterns, formal specifications, and intermediate **Java** programming.

CSSE3100 'Reasoning About Programs' (1 Semester)

2016 – 2017 : University of Queensland, Summer Research Scholar

Worked with Professor Ian Hayes on extending **Java** to support interface-like Capabilities to enforce explicit permissions and restrict cross-object privilege access.

Researched implementations of runtime interface dispatch and subtype checking, and began implementation of Capabilities in the **OpenJDK Parser / Compiler**.

2016 : Google Summer of Code for The Julia Language

Developed an IDE-integrated interactive tutorial system for **Julia**. Presented at JuliaCon 2016.

2014 – 2016 : Tehnika Group, Web Developer

Full stack web development and maintenance of large line-of-business web applications in **JavaScript (Node and Angular)**, **PHP** and **C# (ASP.NET)**.

Skills

Languages : *Proficient:* Java, C#, Julia, Python, HTML / CSS, SQL; *Familiar:* JavaScript, C, Matlab, PHP

Technologies : AWS, Spring, Git, Linux, \LaTeX

Awards

2017 – 2019 : Hawken Scholar Awarded to top 5% of the UQ Engineering cohort.

2016 – 2018 : Dean's Commendation for Academic Excellence

2016 : Winner of UQ Computing Society Hackathon

For UQFlix, a **ASP.NET Core** web-app which streams video-on-demand from the UQ Library and offers recommendations using genre-based collaborative filtering machine learning in **Julia**.

2015 : Paul Gampe Open Source Award at the UQ ITEE Excellence Showcase

For spearheading the open-sourcing of the FarmSim class project with over 60 contributors.

2015 : QUT Hackathon Prize

An academic citation metrics web-app using **Node.js** and the Microsoft Academic Knowledge API.

2013 : Australian Student Prize Awarded to the top 500 students nationally by the Education Minister.

Projects

2016 : Borealysis

Machine learning analysis of BHP borehole data at Uearthed Hackathon, achieving 90% accuracy using **Deep Neural Networks** and **Nested Decision Forests** through **AzureML**.

2013 : Evolutionary Image Compression Algorithm

Genetic algorithm in C# for lossless image compression: up to 20% smaller than zipped PNG.