Matthew Lake

Phone:
Email: mgtlake@outlook.com
Github: github.com/matthew-lake

Education

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

University of Queensland, Australia.

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

GPA: **6.48** (out of 7)

Experience

2017 : UQ Tutoring

Tutored CSSE2002 'Programming in the Large' at the University of Queensland.

Taught program design patterns, formal specifications, and structured Java programming, with a median feedback rating of 4.5 / 5 from my students.

Responsible for preparing lessons, teaching classes, and grading assessment.

2016 – 2017 : UQ 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.

Project later published as "Capabilities for Java: Secure access to resources.", Hayes et al.

2014 – 2016 : Tehnika Group

Full stack web development in JavaScript (Node and Angular), PHP and C# (ASP.NET). Embedded systems in Python.

Developed and maintained large line–of–business web applications.

Worked independently and in small teams to fulfil client needs.

2016 : Google Summer of Code for The Julia Language

Developed an Open Source Interactive Tutorial System for Julia and the Juno IDE.

Collaborated remotely with my mentor and the Julia community.

Presented at JuliaCon 2016.

Skills

- **Languages:** **Proficient:** C#, Julia, Java, JavaScript, HTML / CSS, SQL
  Familiar: Python, Matlab, PHP, VB.NET
- **Technologies:** Git, LaTeX, Linux

Awards

2017 – 2018 : Hawken Scholar

Awarded to top 5% of cohort.

2016 – 2017 : 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 by organising re–licensing with over 60 contributors.

2015 : QUT Hackathon Prize

For the InCiteful web–app, which provides citation metrics for academics using Node.js and the Microsoft Academic Services API.

2013 : Australian Student Prize

Awarded by the Federal Minister for Education to the top 500 students nationally.

Projects

2016 : Borealysis

Machine learning analysis of BHP borehole data at Unearthed 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.

2015 – 2016 : Farmsim Game

Farm simulator game in Java with a multi–player marketplace. I played a leading role in this large group project, and personally implemented procedural world generation and agent AI.