

Alex Cummaudo

Research Software Engineer

alexcu@me.com
<https://alexcu.me>

Skills

CORE

Frontend + Backend Development iOS Development RESTful API Design UI/UX Design
Dynamic Programming Concurrent Programming Project Management Reporting
Prototyping Excellent Communication Skills High Coding Standards Researching Teaching

TECHNICAL

Objective-C Swift Node.js JavaScript DOM Ruby Python C# Java C C++
.NET Pascal UIKit Bootstrap SCSS LESS CSS3 LaTeX

SOFTWARE

Google Docs Microsoft Office Git Xcode MySQL PostgreSQL MongoDB Apache
Nginx AWS Emacs VSCode Visual Studio Trello Pixelmator Lucidchart

Experience

Research Software Engineer

Dec 2016–Present

Applied Artificial Intelligence Institute (A²I²), Deakin University, Burwood

A²I² contributes to the development of human-in-the-loop AI and AI experimentation across all sectors.

- > Research data engineering pipelines to detect alphanumeric sequences in unstructured scenes using machine learning.
- > Developed label annotation software to assist with curating training data that is fed into training AI models.
- > Investigate frameworks to better develop explainable and scalable AI solutions.
- > Developed a data science platform that helps integrate data science and software engineering teams.

Senior Academic Resident Tutor

Aug 2017–Nov 2018

International House, The University of Melbourne, Parkville

Senior Residential Tutor for timetabling at the college, teaching programming using Java and C.

- > Develop and maintain: the academic tutorial programme timetable; student feedback surveys; and the student attendance marking system using advanced online spreadsheets.
- > Assist the Academic Coordinator in the allocation of tutors to tutorials and running the tutorial programme throughout the semester.
- > Assist the Deputy Head of College to produce the roster for scheduled resident tutor duties using advanced online spreadsheets.
- > Supplement student knowledge by exposing them to core programming concepts.
- > Help prepare students for tests and exams.
- > Provide daily pastoral care and mentoring to students.
- > Assist students with weekly programming tasks and assignments.

Tutor

Mar 2017–Jun 2017

Deakin University, Burwood

Teaching a first-year Introduction to Apps Design unit.

- > Introduce app development concepts, such as monetisation and development lifecycles.
- > Develop app prototypes using via mobile-friendly web applications.
- > Introduce students to HTML5, CSS, JavaScript, jQuery and DOM manipulation.
- > Encourage group discussion with students and pairing exercises.

iOS Developer

Aug 2015–Feb 2016

SEEK Ltd., Melbourne

SEEK is Australia's largest jobs, employment, career and recruitment website.

- > Development and release of the SEEK jobseeker iPhone and iPad app.
- > Integrated a prompt for app feedback review, which improved the App Store rating from six 1 star reviews to 33 reviews averaging 4.5 stars on launch-day alone.
- > Added personal recommendations to the jobseeker app, providing thousands of personalised jobs to candidates on their mobiles.
- > Experience with continuous deployment and test-driven development environments.

Software Engineer

Aug 2014–Aug 2015

Swinburne NICTA Software Innovation Lab (SSIL), Hawthorn

SSIL delivers research-driven high-impact software and is partnered with National ICT Australia.

- > Lead drone-flight software project that automates drone flights.
- > Developed fleet visualiser prototype integrated using Google Maps SDK used for bus fleets in Kuala Lumpur.
- > Created a web-based IDE used for rapid prototyping software to create Android apps.
- > Development with bleeding-edge technology stacks and rapid-prototyping environment.

Tutor

Mar 2014–Aug 2016

Swinburne University of Technology, Hawthorn

Teaching first-year introductory programming and object-oriented programming units.

- > Engagingly teaching students to learn foundation programming concepts.
- > Group discussion and running group exercises.
- > Preparing students for future programming and problem-solving units.
- > Helping students through basic Pascal, C and C# and giving one-to-one feedback.

Freelance UI/UX Designer

Mar 2014–Aug 2016

LeadSoftware, Melbourne

LeadSoftware specialises in complete tracking, logistic and dispatch systems.

- > Lead UX and UI design for FairFind, a global marketplace for antique, fashion, fine art and collectable fairs.
- > Lead UX and UI design for a large-scale on-board taxi dispatch system and iOS/Android apps in development for CABiT, a Melbourne-based Taxi company.
- > Strong interaction with development team to explain prototypes and mock-ups developed and provide feedback on implemented designs.
- > Iterative prototype process using a mix of whiteboard, Pixelmator, Keynote and FluidUI.

Publications

2019 International Conference on Web Engineering (ICWE)

Jun 2019

Merging AI-powered API Outputs using Proportional Representation Approach

Tomohiro Ohtake, Alex Cummaudo, Mohammed Abdelrazek, Rajesh Vasa and John Grundy

DOI: TBA

2018 IEEE International Conference on Teaching, Assessment, and Learning for Engineering (TALE)

Dec 2018

SplashKit: A Development Framework for Motivating and Engaging Students in Introductory Programming

Jake Renzella, Alex Cummaudo, Andrew Cain, John Grundy, Jonathon Meyers

DOI: 10.1109/TALE.2018.8615203

**2018 IEEE International Conference on Teaching,
Assessment, and Learning for Engineering (TALE)**

Dec 2018

A Proposal for Integrating Gamification into Task-Oriented Portfolio Assessment

Jonathon Meyers, Andrew Cain, Jake Renzella, Alex Cummaudo

DOI: 10.1109/TALE.2018.8615174

Australasian Computing Education Conference 2017

Jan 2017

*User Perceptions of Using an Open Learner Model Visualisation Tool for
Facilitating Self-regulated Learning*

Check-Yee Law, John Grundy, Andrew Cain, Rajesh Vasa, Alex Cummaudo

DOI: 10.1145/3013499.3013502

Open Source

Doubtfire Learning Management System

Jul 2013 – Present

github.com/doubtfire-lms

Postgres Ruby on Rails Grape AngularJS CoffeeScript

- > Developed majority of web-based front-end
- > Automated processor for student work upload pretty-printed to PDFs
- > Burndown charts to view student progress
- > Visualisations representing student learning
- > Integrated ticketing system for student helpdesk
- > Used at Swinburne, Monash and Deakin universities

SplashKit Educational SDK

Jul 2016 – Dec 2016

splashkit.io

C/C++ Ruby C# Python Pascal

- > Developed language translation processor
- > Automated C-code library generation using API parser written in Ruby
- > Website development and API documentation

Education

Doctor of Philosophy

Mar 2018–Present

Deakin University, Burwood

Thesis: *Operationalising Artificial Intelligence with Software Engineering Practices*

Supervisory Panel: Prof. Rajesh Vasa, A/Prof. Andrew Cain, A/Prof. Mohamed Abdelrazek, Prof. John Grundy

Bachelor of Information Technology (Honours)

Mar 2017–Oct 2017

Deakin University, Burwood

H1 - First Class Honours

Thesis: *Recognition and Prominence Ranking of Alphanumeric Number Sequences in Images*

Supervised By: Prof. Rajesh Vasa, A/Prof. Andrew Cain

Homepage: <http://deakin.edu.au/~ca/alphanum>

Bachelor of Science, Software Development Major

Aug 2013–Dec 2016

Swinburne University of Technology, Hawthorn

GPA 4.0

Victorian Certificate of Education (VCE)

Feb 2010–Nov 2012

Parade College, Bundoora

Australian Tertiary Admittance Ranking (ATAR) of 98.00 of 99.95.

Awards

Vice Chancellor's Prize 2018

3 October 2018

Awarded to the top honours student in each Faculty in 2017.

Awarded by Prof. Jane Den Hollander – Vice Chancellor, Deakin University.

University Medal 2017

28 August 2017

For being the most outstanding student in the Faculty of Science, Engineering and Technology in 2016.

Awarded by Graham Goldsmith – Chancellor, Swinburne University.

Swinburne Computer Science and Software Engineering Prize

31 May 2017

In recognition of the highest achieving graduate in the BSc. (Software Development) in 2016.

Awarded by Prof. Linda Kristjanson – Vice Chancellor, Swinburne University.

Integrated Application Development James Wauchope Prize

31 May 2017

In recognition of the highest achieving graduate in the BSc. (Software Development) in 2016.

Awarded by Prof. Linda Kristjanson – Vice Chancellor, Swinburne University.

Pham Family Honours Scholarship

5 Apr 2017

For a high achieving student commencing the BIT (Honours) in 2017.

Awarded by Prof. Trevor Day – Executive Dean, Deakin University.

Deakin Scholarship of Excellence

1 Mar 2017

For demonstrating exceptional promise beyond academic achievements.

Awarded by Deakin University.

2016 Swinburne Student Achievement Award

Sep 2016

For demonstrating a high level capacity to be flexible, adaptable and in overcoming life's challenges in order to meet study commitments.

Awarded by Swinburne University.

Certificate of Achievement Awards

Nov 2014, Jul 2015

Highest Achieving Student with the highest marks in nine subjects.

Awarded by Prof. John Wilson – Executive Dean, Swinburne University.

Certificate of Appreciation Award

1 Nov 2013

Swinburne ICT Student Ambassador Program.

Awarded by Prof. Leon Sterling – Dean, Swinburne University.

Vice Chancellor's Scholarship

31 Mar 2013

On outstanding academic excellence.

Awarded by Prof. Linda Kristjanson – Vice Chancellor, Swinburne University.

Dux Award

8 Feb 2013

On excellent VCE results and one of the highest ATAR scores in the college.

Awarded by Dr. Denis Moore – Principal, Parade College.

References

Available upon request.