

# 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 (A<sup>2</sup>I<sup>2</sup>), Deakin University, Burwood

A<sup>2</sup>I<sup>2</sup> 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****ACE 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

Postgres Ruby on Rails Grape AngularJS CoffeeScript

**Jul 2013 – Present**  
github.com/doubtfire-lms

- > 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

C/C++ Ruby C# Python Pascal

**Jul 2016 – Dec 2016**  
splashkit.io

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

## Education

### Doctor of Philosophy

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

**Mar 2018–Present**

### Bachelor of Information Technology (Honours)

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>

**Mar 2017–Oct 2017**

### Bachelor of Science, Software Development Major

Swinburne University of Technology, Hawthorn

GPA 4.0

**Aug 2013–Dec 2016**

### Victorian Certificate of Education (VCE)

Parade College, Bundoora

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

**Feb 2010–Nov 2012**

## Awards

### Vice Chancellor's Prize 2018

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

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

**3 October 2018**

### University Medal 2017

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

Awarded by Graham Goldsmith – Chancellor, Swinburne University.

**28 August 2017**

### Swinburne Computer Science and Software Engineering Prize

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

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

**31 May 2017**

### Integrated Application Development James Wauchope Prize

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

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

**31 May 2017**

**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.