

# Alex Cummaudo

## Research Software Engineer

Brunswick, VIC, Australia  
BSc, BIT(Hons), PhD(c)



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### > Experience

#### **Applied Artificial Intelligence Institute, Deakin University, Burwood** DEC 2016–PRESENT

Research Software Engineer

##### RESPONSIBILITIES

- Translate the Institute's engineering outcomes to applied research contributions.
- Improve AI integration into existing software engineering and business requirements elicitation methodologies.

##### ACHIEVEMENTS

- Developed an end-to-end system to detect racing bib numbers with machine learning that is now deployed at a major events company in India; *helped to decrease time to send marathon photos to runners thereby increasing sales.*
- Developed a context-specific label annotation software package to assist with curating training data fed into training AI models; *improved model evaluation accuracy to 95%.*

#### **SEEK Ltd, Melbourne** AUG 2015–FEB 2016

iOS Developer (Industry Placement)

##### RESPONSIBILITIES

- Responsible to the iOS development team in producing the flagship SEEK.com.au iPhone and iPad apps.

##### ACHIEVEMENTS

- Led development on a new app feature to prompt users to leave app feedback after applying for a job; *improved App Store ratings from 1 to 4.5 stars on launch-day alone.*
- Co-developed app feature to notify personalised job recommendations to candidates when they become available; *became a central selling-point of a successful marketing campaign in late-2015.*

#### **Swinburne NICTA Software Innovation Lab (SSIL), Hawthorn** AUG 2014–AUG 2015

Software Engineer

##### RESPONSIBILITIES

- Responsible for development of client and innovation projects.

##### ACHIEVEMENTS

- Led development for automated P2P drone-flight software; *enabled novices to bypass the expense and learning curve of flying drones by use of a web-based waypoint plotting system.*
- Developed bus fleet prototype visualising over 950 busses en-route on over 30 bus routes in Kuala Lumpur; *replaced high-maintenance \$1000 GPS units with \$100 smartphones while still retaining visualisation accuracy to 5 metres.*
- Implemented the inaugural flagship website for SSIL, working with content and UI designers to create content; *significantly improved brand profile and search engine optimisation results of SSIL.*
- Created a web-based IDE to prototype Android apps; *reduced time to market for app prototype development.*

#### **LeadSoftware Pty Ltd, Melbourne** MAR 2014–AUG 2016

Freelance UI/UX Designer

##### RESPONSIBILITIES

- Led UX and UI design for FairFind mobile app.
- Led UX and UI design for on-board taxi dispatch systems and mobile apps.

##### ACHIEVEMENTS

- Conducted iterative prototype processes using a mix of whiteboard, Pixelmator, Keynote and FluidUI with clients; *improved processes of requirements elicitation for UX design of company's apps.*
- Liaised with the development team to explain the UI mock-ups developed and provided feedback on implemented designs; *improved designs increased the app store rating of beta apps.*

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## ➤ Education

### ➤ PhD (Soft.Eng./AI) MAR 2018–PRESENT

Applied Artificial Intelligence Institute  
Deakin University, Burwood

### ➤ BIT (Honours) MAR 2017–OCT 2017

Deakin University, Burwood  
H1 - First Class Honours

### ➤ BSc (Software Development) AUG 2013–DEC 2016

Swinburne University of Technology, Hawthorn  
GPA 4.0 of 4.0

### ➤ VCE FEB 2010–NOV 2012

Parade College, Bundoora  
ATAR 98.00 of 99.95.

#### TEACHING POSITIONS

### International House, The University of Melbourne, Parkville AUG 2017–NOV 2018

Senior Academic Resident Tutor

- Residential leadership position as an onsite pastoral carer/mentor to students and Head Tutor responsible for all resident and non-resident tutors reporting to Deputy Head of College.
- Streamlined existing methods to produce tutor duty rosters, student tutorial timetables, student feedback and attendance marking system using online tooling.

### Deakin University, Burwood MAR 2017–PRESENT

Sessional Tutor

### Swinburne University, Hawthorn MAR 2014–AUG 2016

Sessional Tutor

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## ➤ Awards & Honours

#### SWINBURNE UNIVERSITY OF TECHNOLOGY

- **University Medal 2017** 28 Aug 2017; *Most outstanding undergraduate student 2016.*
- **Swinburne CompSci. & SoftEng. Prize** 31 May 2017; *Highest GPA in the 2016 BSc. (SoftDev.) cohort.*
- **12 Top Student In A Unit Prizes** Nov 2013, Dec 2014, Jul 2015; *Student with the highest mark in 12 units.*
- **Vice Chancellor's Scholarship** 31 Mar 2013; *Outstanding academic performance in Year 12.*

#### DEAKIN UNIVERSITY

- **Vice Chancellor's Prize** 3 Oct 2018; *Student with the highest honours grade (94/100).*

- **Pham Family Honours Scholarship** 5 Apr 2017; *Highest academic achievement for a graduate commencing in 2017.*
- **Deakin Scholarship of Excellence** 1 Mar 2017; *Displaying highest academic promise for an undergraduate student commencing in 2017.*

#### PARADE COLLEGE

- **Dux Award** 8 Feb 2013; *Achieved one of the highest ATAR scores in the College.*
- **Chair of Academic Prefect Committee** 2012; *Chaired Committee contributing to academic advancement.*

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## ➤ Skills & Hobbies

#### GENERAL SKILLS

- Excellent Communication Skills ➤ Public Speaking ➤ Project Management & Leadership ➤ Research ➤ Reporting ➤ Teaching ➤ Mentoring

#### TECHNICAL SKILLS

- High Coding Standards ➤ Frontend / Backend Development ➤ iOS Development ➤ RESTful API Design ➤ Dynamic Programming ➤ Concurrent Programming ➤ Objective-C ➤ Swift ➤ JavaScript ➤ SQL ➤ Ruby ➤ Python ➤ C# ➤ Java ➤ C ➤ C++ ➤ .NET ➤ Pascal ➤ CSS3 ➤ L<sup>A</sup>T<sub>E</sub>X

#### SOFTWARE SKILLS

- Microsoft Office ➤ GSuite (Google Docs, Sheets, and Forms) ➤ Git ➤ MySQL/SQL Server ➤ MongoDB ➤ Apache ➤ Nginx ➤ AWS ➤ Emacs ➤ Trello ➤ Pixelmator ➤ Lucidchart ➤ Visio

#### HOBBIES

- Hiking ➤ Travel ➤ Cooking

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## ➤ Major Open Source Software Contributions

### Doubtfire Learning Management System

<http://github.com/doubtfire-lms>

- Developed web-based front-end in Angular.
- Developed processor for student work upload pretty-printed to PDFs.
- Developed visualisations representing mass student learning and progression.
- Developed ticketing system for student helpdesk.
- Used at Swinburne and Deakin universities with over 15k active monthly users.

### SplashKit Educational SDK

<http://splashkit.io>

- Developed language translation processor.
- Developed automated generation of C code using API parser written in Ruby.
- Developed automated SplashKit API documentation from Headerdoc and published to website.
- Developed and designed the SplashKit website used by students.

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## ➤ Academic Publications

- T. Ohtake, A. Cummaudo, M. Abdelrazek, R. Vasa and J. Grundy, “**Merging AI-powered API Outputs using Proportional Representation Approach**,” presented at the *2019 International Conference on Web Engineering (ICWE)*, Jun 2019 (accepted for publication).
- J. Renzella, A. Cummaudo, A. Cain, J. Grundy, and J. Meyers, “**SplashKit: A Development Framework for Motivating and Engaging Students in Introductory Programming**,” presented at the *2018 IEEE International Conference on Teaching, Assessment, and Learning for Engineering (TALE)*, Dec 2018, pp. 40–47.
- J. Meyers, A. Cain, J. Renzella, and A. Cummaudo, “**A Proposal for Integrating Gamification into Task-Oriented Portfolio Assessment**,” presented at the *2018 IEEE International Conference on Teaching, Assessment, and Learning for Engineering (TALE)*, Dec 2018, pp. 1022–1027.
- C.-Y. Law, J. Grundy, A. Cain, R. Vasa, and A. Cummaudo, “**User Perceptions of using an open learner model visualisation tool for facilitating self-regulated learning**,” presented at the *Proceedings of the Nineteenth Australasian Computing Education Conference*, Jan 2017, pp. 55–64.

References available upon request.