

Jake Coppinger

jakecoppinger.com
jake@jakecoppinger.com
github.com/jakecoppinger
Contact me for phone number

Education

University of New South Wales — *BSc Computer Science*

UNSW Co-Op Scholarship

4th Year / 2016 - 2019 / 79.278 Weighted Average Mark

Relevant courses I will complete: Algorithms, OS, Networks, AI, Advanced C++, Computer Vision, Distributed Systems, Neural Networks

- UNSW Computing Elite Students Award
- UNSW Dean's Honours List 2017

Skills

Languages:

Proficient: Python, JavaScript/TypeScript, C/C#

Familiar with: Java, Bash, SQL

Some experience with: Perl, Ruby

Want to learn: Go, Rust

Tools & Frameworks:

Proficient: React, Flask, Serverless Framework, Vim, Git, Tmux, Bolt

Familiar with: AWS Lambda & API Gateway, Webpack

Some experience with: OpenCV, NumPy, AWS EC2, Postgres, Docker, Vue.js

Experience

(Ongoing internship) Westpac (Feb -> July 2019)

Atlassian, 6 month internship (2018)

Worked with the front-end Editor platform team which builds an [advanced WYSIWYG text editor](#) used in production in many Atlassian products. It is an open-source React app using the [Prosemirror](#) toolkit written in TypeScript.

Building a rich text editor in a browser is challenging task - there is a huge amount of complexity which must function intuitively to all levels of users, along with a custom document format and robust real-time collaboration between users. I worked with tools such as Bolt, Browserstack and Jest.

Some highlights were:

- Implementing a dark mode theme which will ship in the Jira mobile apps in collaboration with the native iOS and Android editor team
- Proposing and implementing a change to the Atlassian Document Format used across Atlassian products
- Improving the search algorithm to help users insert rich widgets more intuitively

News Corp Australia, 6 month internship (2017)

Worked in the front-end product development team and with a backend specialist on a relatively small from-scratch project to advance News Corp's front end stack, a Global Preference Centre for email newsletters www.newsletters.news.com.au. It uses Vue.js Server Side Rendering on AWS Lambda behind AWS API Gateway, using GraphQL as an abstraction for legacy systems.

Some things I worked on were:

- Tooling for linking multi-repo structure (emulating a monorepo)
- Front-end dev of the Vue.js app
- Setting up a CI and testing workflow on Atlassian Bamboo using Docker
- Implementing AWS Lambda deployments from Bamboo using the Serverless framework

- On-demand feature branch deployments to Lambda using AWS API Gateway environment
- JS unit tests, setting up Vue component tests using JSDOM, headless parallel Serverless screenshot integration tests
- Load testing to determine the best Lambda CPU/RAM settings and cost
- Improving SSR performance using AWS X-Ray tracing; ~300ms render time to ~50ms

Projects

Cloudspotting.app, 2019 github.com/jakecoppinger/cloudspotting.app

(Still in very active development, I really wanted to ship!)

Weather radar simplified - a web app that shows every Bureau of Meteorology radar image animated on a slippy map in your exact location. I wrote a custom tileserver which georeferences BOM images and generates slippy map tilesets with Python GDAL and ImageMagick, served up to a Mapbox OpenGL slippy map using an OpenStreetMap cache.

Written in TypeScript (for web and Node) and Python. I've been tinkering with FFT powered rain prediction but I need the map first!

Sydney Bus Departures, 2017 github.com/jakecoppinger/sydney-bus-departures

I created a simple API running on AWS Lambda & Heroku to query real-time Sydney bus arrivals using TfNSW's Trip Planner API. I also built a Pebble JS app to query my nearest favourite bus stops and get real-time departures. (I previously visualised Sydney transit data along with a short film/swiss poster: jakecoppinger.com/transit_in_sydney)

UrbanScribe, 2016 github.com/jakecoppinger/urbanscribe

I developed a proof-of-concept system to enable A/B testing in architecture using computer vision. A laptop recognises pedestrians with OpenCV, sends their positions over WiFi to an Arduino which plots their position on a piece of paper.

Departing.io, 2015 jakecoppinger.com/departing_io

A real-time bus arrivals app for Canberra to simply answer "When will my next bus come". Built with a Python backend on Heroku which queries the ACT government's NXTBUS SIRI API and a JS front end that renders on a Canvas using Processing.js

Swirlesque, 2013 jakecoppinger.com/swirlesque

A system for interacting with IoT devices using hand gestures. I developed an Arduino based prototype with a low power gesture recognition algorithm, an Android app in Processing and a 3D printed casing through a year long independent research project while in year 12. I presented my research at [TEDxSydney](#), [Intel ISEF](#), [BHPBSEA](#), [Razorfish](#), [CSIRO](#) and was interviewed by [University of Pennsylvania](#), [SMH](#), [The Australian](#), [ABC News](#), [7:30 report](#), [Ten](#) and [7 News](#).

Other skills

- I play the violin with the UNSW String Ensemble and I was previously in the leadership role of principal violinist in the Canberra Youth Philharmonic Orchestra
- I can type in Colemak faster than Qwerty
- Maps: Active Open Street Map volunteer since January 2018
- Film: I have a love for all aspects of filmmaking
- Design: I have a fascination with graphic, user experience and industrial design along with architecture.

Achievements

- [Represented Australia](#) at the Intel International Science & Engineering Fair 2014, Los Angeles
- [Presented my IoT gesture recognition research](#) at **TEDxSydney** 2014, audience of 2,250
- **3.9m** views & **59k** subscribers on my [filmmaking YouTube channel](#)