# Joshua **Tang**

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## **Skills**

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|---|---|
| **Programming** | Python, Javascript, Dart, C++, C#, C, Java, R, Perl, Bash, SQL, LaTeX |
| **Technologies** | GCP (certified), Firebase, AWS, Docker, Flutter, Flask, React, R Shiny, Hadoop, Spark, PostgreSQL, MongoDB |
| **Languages** | English, Cantonese, Mandarin |

## **Education**

### **University of New South Wales (UNSW)**

MASTER OF INFORMATION TECHNOLOGY *Anticipated Grad Date: Aug 2020*

BACHELOR OF ENGINEERING (HONOURS) - BIOINFORMATICS *2015 - 2018*

- Honours Class 1

## **Experiences**

### **Westpac**

FULL STACK DEVELOPER *Sep 2019 - Present*

- Working in a team where we develop prototypes for proof of concepts with a goal to improve the banking experience
- Developed web and mobile application which were then funded for piloting
- **Tech stack:** Dart, Flutter, Firebase, Azure Cognitive Services, Python, HTML, CSS, JavaScript, Flask, SQLite and PostgreSQL

### **Victor Chang Cardiac Research Institute**

HONOURS STUDENT - SOFTWARE ENGINEER *Feb 2018 - Dec 2018*

- Developed GEOraclePlus which is a fully automated tool that utilises big data frameworks, cloud computing and machine learning to perform data mining and processing on a database with over 2.6 million dataset
- Achieved a F1 score of around 0.93 for the trained text classifiers in machine learning
- Increased the performance of the pipeline up to 24x with cloud computing when comparing to a similar but semi-automated tool
- **Tech stack:** Python, R, Bash, Hadoop, Spark, scikit-learn and AWS EMR

SUMMER SCHOLAR - SOFTWARE ENGINEER *Nov 2017 - Feb 2018*

- Evaluated, tested and performed data analysis with Scavenger which is an RNA-Seq analysis pipeline that we developed
- The pipeline can help to recover false negative results and provide new insights when analysing the data
- **Tech stack:** Python and AWS EC2

VOCATIONAL PLACEMENT - SOFTWARE ENGINEER *Feb 2017 - Nov 2017*

- Developed Scavenger and used it to gather and analyse results for my supervisor's grant application
- **Tech stack:** Python and AWS EC2

SUMMER SCHOLAR - SOFTWARE ENGINEER *Nov 2016 - Feb 2017*

- Developed an automated software testing tool using the idea of Metamorphic Testing
- Submitted and published a paper to an international conference to discuss about the findings using the tool
- **Tech stack:** Python and AWS EC2

### **Timeweave**

SOFTWARE ENGINEER *Sep 2017 - Mar 2018*

- Expanded the Timeweave app by adding support to 5 additional regions and captured more users
- **Tech stack:** Python and Docker

## **Personal Projects**

### **Open Source Projects**

LINKEDRW *May 2019 - Present*

- Created a CLI to generate a resume and a personal website based on a LinkedIn profile
- Implemented the tool with CI\CD pipeline for test automation and automated deployment onto PyPI
- Reached a total of 16,000 downloads on PyPI
- **Tech stack:** Python and Travis CI

**Telegram Bots** *Nov 2015 - Present*
- Developed and deplyoed Telegram Bots with over 4,000 users
- Utility bot for users to manipulate PDF files; the bot has processed over 29,000 PDF files and supports 8 different languages
- Utility bot that can monitor and filter content shared in group chats
- Gaming bot which allows users to play the card game Big Two
- Utility bot that allows users to experience cognitive services
- **Tech stack:** Python, GCP, Azure Cognitive Services, Heroku, Docker, PostgreSQL

## School Projects

### Building Occupancy Montioring Tool

UNSW - COMP6733 INTERNET OF THINGS (IoT) EXPERIMENTAL DESIGN STUDIO *Sep 2019 - Dec 2019*
- Impelemented an IoT system in a team that can pick up Bluetooth beacons and utilised this information to montior the occupancy level of buildings, as well as developing a web interface to visualise it
- **Tech stack:** JavaScript, Python, React, GCP

### Country Recommendation Tool

UNSW - COMP9321 DATA SERVICES ENGINEERING *Jul 2018 - Nov 2018*
- Worked as a team to develop a country recommendation tool that involves a REST API backend and a web interface frontend
- **Tech stack:** JavaScript, Python, React, Flask, MongoDB

### Item Swapping Platform

UNSW - COMP4920 MANAGEMENT AND ETHICS *Jul 2018 - Nov 2018*
- Developed a web item swapping platform in a team
- **Tech stack:** Python, HTML, CSS, JavaScript, Flask, SQLAlchemy

### Web Analysis Tool

UNSW - BINF3111 BIOINFORMATICS PROJECT A *Jul 2017 - Nov 2017*
- Worked as a team to develop a web analysis tool with a better and higher interactivty user interface compared to existing tools
- **Tech stack:** R and R Shiny

### Maze Puzzle Game

UNSW - COMP2911 ENGINEERING DESIGN IN COMPUTING *Feb 2016 - Jun 2016*
- Developed a maze puzzle game and was responsible for implementing the maze generation algorithm and the different levels of smartless of AIs that could solve the maze
- **Tech stack:** Java

## Publications

**Harnessing Multiple Source Test Cases in Metamorphic Testing: A Case Study in Bioinformatics**

J. Y. S. TANG, A. YANG, T. Y. CHEN, J. W. K. HO

*2017 IEEE/ACM 2nd International Workshop on Metamorphic Testing (MET)*, 2017

**Scavenger: A pipeline for recovery of unaligned reads utilising similarity with aligned reads**

A. YANG, J. Y. S. TANG, M. TROUP, J. W. K. HO

*F1000Research* 8 (Sept. 4, 2019) p. 1587. 2019

**Discovery of perturbation gene targets via free text metadata mining in Gene Expression Omnibus**

D. DJORDJEVIC, J. Y. S. TANG, Y. X. CHEN, S. L. S. KWAN, R. W. K. LING, G. QIAN, C. Y. Y. WOO, S. J. ELLIS, J. W. K. HO

*Computational Biology and Chemistry* 80 (June 1, 2019) pp. 152–158. 2019

**Pseudodiploid pseudo-long-read whole genome sequencing and assembly of Pseudonaja textilis (eastern brown snake) and Notechis scutatus (mainland tiger snake)**

R. EDWARDS, T. AMOS, J. TANG, B. CAWOOD, S. RISPIN, D. E. TUIPULOTU, P. WATERS

*F1000Research* 7 (June 18, 2018). 2018

## Certifications, Honours & Awards

| | | |
|---|---|---|
| 2019 | **Associate Cloud Engineer,** Google Cloud |
| 2019 | **The CSE Undergraduate Performance Prize Year 4 (8th Place),** Faculty of Engineering, UNSW |
| 2017 | **Dean's Honours List,** Faculty of Engineering, UNSW |
| 2016 | **Dean's Honours List,** Faculty of Engineering, UNSW |