Joshua **Tang**

(+61) 403 431 786 | joshuaystang@gmail.com | zeshuaro.github.io/portfolio/ | zeshuaro | joshua-tang | Joshua Tang

Skills

Programming Python, C++, C#, C, Java, Javascript, R, Perl, Bash, SQL, LaTeX
Technologies AWS, GCP, Docker, Flask, R Shiny, REST API, Hadoop, Spark, PostgreSQL, MongoDB
Languages English, Cantonese, Mandarin

Experiences

DXC Technology

Associate Application Developer — *Feb 2019 - Present*

- Delivered services to client which include configuring their hardware and sever settings
- Collaboratively worked with a client to come up with a set of mobility patterns
- Assisted with an enterprise architecture review on Active Directory

Victor Chang Cardiac Research Institute

Honours Student — *Feb 2018 - Dec 2018*

- Developed GEOraclePlus using **Python**, **R**, **Bash**, and big data frameworks (**Hadoop** and **Spark**) - a fully automated tool that utilises cloud computing (**AWS EMR**) and machine learning (**scikit-learn**) to perform data mining and processing on a large database
- Achieved a F1 score of around 0.93 for the trained text classifiers in machine learning
- Increased the performance of the pipeline by 24x with cloud computing when comparing to a similar but semi-automated tool

Summer Scholar — *Nov 2017 - Feb 2018*

- Evaluated, tested and performed data analysis with Scavenger using **Python** and **AWS EC2** - an RNA-Seq analysis pipeline that we developed
- The pipeline was able to recover a portion of false negative results from the alignment results of RNA-Seq alignment tools
- Assisted with a case study for a data mining and processing tool and helped to construct an organ-specific gene regulatory network

Vocational Placement — *Feb 2017 - Nov 2017*

- Developed Scavenger using **Python** - an RNA-Seq analysis pipeline
- Gathered and analysed results from the pipeline to help with my supervisor's grant application

Summer Scholar — *Nov 2016 - Feb 2017*

- Completed a software testing project using the idea of **Metamorphic Testing** and **Python**
- Submitted and published a paper to an international conference to discuss about my findings in the project

Timeweave

Software Engineer — *Sep 2017 - Mar 2018*

- Expanded the Timeweave app by developing new scraping scripts with **Python** and **Docker**

Code Camp

Teaching Assistant — *Sep 2017*

- Worked as a team to teach and help kids to develop mobile games using block coding

Woolworths Supermarkets

Replenishment Team Member — *Jul 2016 - Nov 2016*

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 using **Python**
- Implemented with **Travis CI** for test automation and automated deployment onto PyPI
- Reached a total of 6,800 downloads on PyPI

Telegram Bots — *Nov 2015 - Present*

- Developed the following Telegram Bots using **Python**, and **PostgreSQL** for bots that have a database at the backend
- Utility bot for users to manipulate PDF files using different Python PDF packages
- Gaming bot which allows users to play the card game Big Two
- Utility bot to help monitor and filter the content in group chats by utilising Google Cloud Vision and Safe Browsing APIs
- Utility bot that allows users to experience cognitive services with the use of Microsoft Cognitive Services APIs

School Projects

Web Country Recommendation Tool

UNSW - COMP9321 Data Services Engineering *Jul 2018 - Nov 2018*

- Worked as a team to develop a country recommendation tool - this project includes developing a backend **REST API** with **Python**, **Flask** and **MongoDB**, as well as a frontend client with **ReactJS**
- Responsible for implementing the APIs at the backend and some of the features at the frontend

Web Item Swapping Platform

UNSW - COMP4920 Management and Ethics *Jul 2018 - Nov 2018*

- Developed a web item swapping platform in a team using **Python**, **Flask** and **SQLAlchemy** at the backend, and **HTML**, **CSS**, **Javascript** at the frontend
- Responsible for implementing the features in both backend and frontend

Web Analysis Tool

UNSW - BINF3111 Bioinformatics Project A *Jul 2017 - Nov 2017*

- Worked as a team to develop a web analysis tool with **R** and **R Shiny**
- The tool utilises an existing method for estimating genome size and builds a better and interactive user interface on top of it, and it was ultimately used as part of a snake sequencing project

Maze Puzzle Game

UNSW - COMP2911 Engineering Design in Computing *Feb 2016 - Jun 2016*

- Developed a maze puzzle game in a team using **Java**
- Responsible for implementing the maze generation algorithm and the different levels of smartless of AIs that could solve the maze

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

bioRxiv (Nov. 26, 2018) p. 345876. 2018

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

Education

University of New South Wales (UNSW)

Bachelor of Engineering (Honours) - Bioinformatics *Feb 2015 - Dec 2018*

- Honours Class 1

Honours & Awards

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