MATTHEW YONG

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EDUCATION

University of Melbourne, Melbourne July 2018 - November 2020
Masters of Engineering, Electrical Engineering.

University of Melbourne, Melbourne July 2015 - July 2018
Bachelor of Science, Bionengineering-Systems.

Coursework: Data Structures & Algorithms, Object Oriented Design, Cloud Computing. Embedded Systems, Communication Networks, Control Systems, Signal Processing, Circuits.

PROJECTS

SinsOnTwitter Cloud Project - (Link to Application, GitHub Link)

- Integrated web application, database and tweet harvester into a three node cluster system.
- Developed auto deployment scripts for cloud provisioning & system setup using Ansible.
- Implemented a three node CouchDB database system using Docker containers and bash scripts.
- Managed cloud resources such as volumes and security groups.
- **Utilized**: Ansible, Cloud, Bash, Linux, Git, CouchDB, Docker, Apache2, cluster, scalability.

Online C Web Editor and Compiler - (Link to Application, GitHub Link)

- Designed RESTful and OOP based backend C++ server with POCO C++ Libraries.
- Designed front end user interface with HTML, CSS and Javascript Bootstrap.
- Deployed application onto an EC2 AWS Windows instance.
- **Utilized**: C++, Poco C++, Git, HTML, CSS, Javascript, Bootstrap, RESTAPIs, JSON, AWS.

Embedded Electronic Game Console - (GitHub Link)

- Implemented LCD to micro-controller bit communication via bit bashing through SPI protocol.
- Designed battery level detection with ADC and screen brightness control with PWM.
- Used micro-controller interrupts to create an event driven program.
- Designed PCB board on Altium including wire routing and component placement.
- **Utilized**: C, SPI, Embedded Electronics, PCB design, JTAG, soldering, Altium Designer.

IoT Greenhouse Management System - (Link to Application, GitHub Link)

- Developed REST based real time sensor communication with Express backend using Ajax.
- Designed front-end user interface using Materialize CSS Framework.
- Configured dynamic chart plots using Chart.js.
- Deployed web application onto an EC2 AWS Linux instance.
- **Utilized**: Ajax, Materialize, Chart.js, Express, CouchDB, RESTAPIs, ESP8266 WiFi Module.

WORK EXPERIENCE

University of Melbourne - Research Assistant
July 2019 - August 2019

Project : Spatially Adaptive Photographic System

- Integrated communication between Python and C++ modules using TCP sockets.
- Developed multi-threaded programs using Python's multiprocessing library.
- Configured Linux systemd files to automate program execution on RaspberryPi.

- Restructured system code, reducing tight coupling between program modules.
- **Utilized**: Raspberry Pi, C++, Python, I2C, Git, Linux, Socket Programming, Multi-Processing.

University of Melbourne - Research Assistant
Jan 2018 - Feb 2018

Project : EMU Upper Limb Rehabilitation Robot

- Proposed mechanical solutions for current robot design, reducing material costs to about 20%.
- Taught myself Computer Aided Software Design on SolidWorks.
- Collaborated & communicated with supervisors for feedback on designs.

EXTRA-CURRICULAR

- Represented Victoria in the Under-22 Ultimate Frisbee State Championships in 2017.
- Represented Melbourne University's Ultimate Frisbee Team for Uni Games since 2015.