# 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, Bio-engineering-Systems.

**Coursework**: Data Structures & Algorithms, Object Oriented Design, Cloud Computing. Embedded Systems, Computer Networking, Digital Systems, Control Systems, Signal Processing, Probability.

## WORK EXPERIENCE

**University of Melbourne** July 2019 - August 2019
Research Assistant
Project: Spatially Adaptive Photographic System.

- Implemented a TCP socket server to link camera to sensor programs written in C and Python.
- Improved usability of system by integrating an auto restart feature using Linux unit system files.
- Developed caching mechanism on socket server in Python, speeding up program execution by 40%.
- **Leveraged knowledge** in Git, C++, Python, I2C bus protocol, TCP Sockets and Linux systems.

## PROJECTS

**Online C Web Editor and Compiler — (Application Link, GitHub Link)**

- Developed a web application that allows users to edit and compile C code online.
- Implemented object oriented principles to design a RESTful web server using C++.
- Designed front end user interface with HTML, CSS and Javascript Bootstrap.
- **Utilized**: C++, AWS, Git, HTML, CSS, Javascript, Bootstrap, RESTAPIs, JSON.

**Twitter Analytics Cloud Project — (GitHub Link)**

- Worked in a group of five to design a scalable social media analytics cloud cluster system.
- Integrated web application, NoSQL database and tweet harvester using Docker and Bash scripts.
- Created auto deployment scripts to deploy and manage Linux machines on cloud using Ansible.
- **Utilized**: Linux systems, Ansible, Bash, Git, CouchDB, Docker, Apache2, ZenHub, cloud tools.

**IoT Greenhouse Management System — (Application Link, GitHub Link)**

- Developed a web application that reads live data from humidity, temperature, soil moisture sensors.
- Designed responsive front-end user interface using Materialize, Chart.js and JQuery.
- Programmed ESP8266 Wifi chip to send/receive HTTP data to web application on AWS server.
- **Utilized**: JQuery, AWS, Chart.js, Express.JS, RESTAPIs, ESP8266 Chip.

**Embedded Electronic Game Console - (GitHub Link)**

- Created and extended an embedded electronic game console system from scratch.
- Programmed micro-controller to run games and communicate with external components via SPI.
- Designed schematics and PCB board on Altium Designer and soldered surface mount components.
- **Utilized**: C, SPI bus protocol, PCB design, Altium Designer, ATMEGA micro-controllers.