TAN WEI QIANG BENJAMIN

HP: +65 8145 6842 | E-mail: benjamin_tan@u.nus.edu | https://www.linkedin.com/in/tanweiqiang/ | https://btwq97.github.io/

EDUCATION & QUALIFICATION

Bachelor of Engineering (Electrical Engineering), National University of Singapore (NUS) **AUG 2018 – PRESENT**

- Specialisation: Internet of Things; Industrial Tracks: 5G and Next Gen Networks and Advanced Electronics.

JOB EXPERIENCE

Intel's AI for Youth Program Instructor **AUG 2021 – PRESENT**

- To facilitate and conduct Intel's AI for Youth Program for Secondary and Junior College's students to promote youth's interests in Artificial Intelligence (AI).

Internet of Things Engineer Internship **MAY 2021 – JUL 2021**

- Developed a Python script to replace popular Modbus testing tool (Modbus Poll) for data collection and testing.
- Created a data pipeline to AWS Timestream Cloud using AWS SDK for storage and visualisation.
- Visualised data collected using AWS Quicksight and AWS Managed Grafana to track devices' health conditions in real-time. Dashboards would also trigger alerts according to user's setpoints.
- Miscellaneous: documentations for proper handover, procurement of hardware products and data entry.

Coding Tutor Freelance **JUL 2020 – MAY 2021**

- Conducted programming lessons for students aged 7-15 and taught them basic C++, HTML and CSS languages.
- Provided timely feedbacks to students' works via email and created easy-to-digest weekly notes to facilitate learning.
- Course 1: Indie Game Design:
  - Used open-source library (SFML) for the rendering of window, graphics, and audio modules into game applications.
  - Created classical games such as Tetris and Race Car in C++ as take-home projects.
- Course 2: Basic Frontend Development:
  - Used HTML and CSS to design and built websites using open-source templates.
  - Created sub-domains using GitHub to make student's website publicly available.
  - Used modern web design tool such as Google Sites to create websites using Graphical User Interface (GUI) method.

Internet of Things Engineer Internship **MAY 2020 – DEC 2020**

- Revised and updated company's firmware applications in Linux OS by adding the following functionalities into the system:
  - Added cryptography functionality (AES 128) using openSSL to securely perform data transfer between devices.
  - Improved cloud to device control methodology from using SSH to MQTT JSON API.
- Wrote a Python script to automate email subscription services to alert customers of any anomaly in data collected.
- Hardware testing of smart sockets:
  - Data collection using MQTT, storing of data locally using sqlite3 and visualisation of data using matplotlib.
- Miscellaneous: procurement of hardware products.

RELEVANT COURSEWORKS

CS2040C Data Structures and Algorithms **AY20/21 S2**
Learning fundamental data structures and algorithms concepts.

EE2028 Microcontroller Programming and Interfacing **AY19/20 S1**
Programmed LPC 1769 ARM Cortex M3 Baseboard using NXP LPCXpresso (C programming and ARM Assembly language).

CS1010E Programming Methodology **AY19/20 S1**
Learnt fundamental programming concepts in Python.

EE2026 Digital Design **AY18/19 S2**
Programmed Digilent Basys 3 FPGA Baseboard using Xilinx Verilog (C programming).

LEADERSHIP EXPERIENCE

AIESEC in NUS | Global Information Session 2019 | Team Leader (Marketing) **SEP 2019**
Planned and executed marketing strategies to promote AIESEC Volunteering Projects to the NUS student body.

AIESEC in NUS | August Recruitment OC 2019 | Team Leader (Logistics, Finance and Admin Matters) **JUN 2019 – AUG 2019**
Negotiated with external companies for product and cash sponsorships.

Engin' Club | Engin' O'Week 2019 | Head of Programs (Games, Academics and Finale) **MAY 2019 – JUL 2019**
Oversaw 3 sub-groups and executed a freshmen orientation camp with over 900 participants.

Electrical and Computing Engineering (ECE) Club | Impetus Camp 2019 | Organising Committee **MAY 2019 – JUL 2019**
Assisted with the execution of the games and logistical matters during orientation camp.

RELEVANT CERTIFICATIONS / AWARDS

Database Management Essentials **JUN 2021**
Credentials: https://www.coursera.org/account/accomplishments/certificate/8EWQUZVEMKB2

Google Cloud Platform Big Data and Machine Learning Fundamentals **JAN 2021**
Credentials: https://www.coursera.org/account/accomplishments/certificate/P6N5YW2MTQH9

NUS iDP Ideathon -- Ideate 2020 | Team: CAMmunication **AUG 2020**

- Topic: Innovate ways to improve remote collaboration (link: https://ideate2020.devpost.com/).
- Solution: A software application that uses computer's camera to scan and predict emotions through Artificial Intelligence and Machine Learning Algorithms.
- Result: 1st Place (out of 85 participants) Credentials: https://ideate2020.devpost.com/project-gallery

RELEVANT SKILLS

- Hard skills:
  - Linux OS and command line interface.
  - C / C++ (for embedded systems and scripting).
  - Python (for scripting).
- Proficient in English and Chinese (simplified) languages.
- Comfortable with the use of collaboration tools such as Gitlab, Google Drive, Slack and Jira.