# TAN WEI QIANG BENJAMIN

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## 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

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

- Created an in-house application to replace popular modbus testing tool (Modpoll) for data collection and testing using Python.
- Created data pipeline to store raw data in AWS Timestream cloud.
- Visualisation of data using AWS Quicksight and AWS Managed Grafana.
- Miscellaneous: documentations for proper handover, procurement of hardware products from Chinese manufacturers and data entry.

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

- Delivered clear and easy-to-digest contents to students from age 7-15 with weekly notes.
- Course 1: Indie Game Design:
  - Used open-source library (SFML) for the rendering of window, graphics, and audio modules.
  - Created classical games such as Tetris and Race Car.
- Course 2: Basic Frontend Development:
  - Used HTML and CSS to design and build websites using open-source templates.
  - Created sub-domains using Github to make website public.
  - Used modern web design tool such as Google Sites to create websites using GUI method.

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

- Revised and updated company's firmware applications in Linux Operating System (OS).
- Improved cloud to device control methodology from using SSH to MQTT JSON API.
  - Added cryptography functionality (AES 128) using openSSL for secure JSON string transfer.
- Wrote a Python script to automate email subscription services.
- 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 from Chinese manufacturers.

## 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.