# Ngau Wah Xian

## Data Analyst | Electrical Engineer

Working in the data realm has shown me how much data analytics can impact everyday life. The confluence of data and programming skills has enabled me to contribute millions in terms of cost savings for my company. I am also actively involved in grid automation projects to enable smart grid. I am a fast learner, agile and a problem solver which enables me to quickly pick up relevant skills as required.


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## EDUCATION

**Imperial College London**
United Kingdom
(2013-2017)
**Master** degree in Electrical and Electronic Engineering
**First Class Honours**

**Methodist College KL**
(2012-2013)
**4A*s in A-Levels**

**SMJK Chong Hwa**
2010-2011
**10A+ in SPM**
(GCSE equivalent)

## LANGUAGE & SKILLS

English
Chinese
Malay

Analytical thinking, project management, adaptability, business intelligence, teamwork

## PROGRAMMING

- SQL, VBA, Java, MATLAB, C++, ASP.NET Core
- Python with ML (scikit learn, numpy, pandas, matplotlib, jupyter notebook)
- HTML, CSS, Javascript

## SOFTWARE TOOLS

- Microsoft Office Suite, Excel with VBA Macros
- Cloud: Amazon AWS, Microsoft Azure
- BI: Tableau, PI Vision, Qlik
- Certifications in Osisoft PI Historian System Products

## PROFESSIONAL EXPERIENCE

**Data Analyst & Electrical Engineer** in **Tenaga Nasional Berhad** (2017-Present)
Awarded the **Meritorious Performance Award** for 3 years in a row

- **Data Engineering and Management**
  - Managed the set-up of digitalization infrastructure from ground up: data connectivity from 400+ Linux Servers and SCADA systems, DB architecture, data pipelines etc.
  - Orchestrated the deployment of highly available time-series Database Systems and servers in TNB Cloud and acted as the Database System administrator.
  - Developed database schemas and engineering using SQL Server, data pipelines and developed custom ETL tools using Python and RESTful Web APIs for user applications
  - Undertook the lead automation engineer role and developed various tools using Python, Excel VBA Macros, SDKs and bash for data normalization, configuration and management.
  - Managed and trained a team of 15 engineers and technicians on data management.
  - Implemented various PI Asset Framework databases, Analytics and Notifications.
- **Data Analytics and Digital Intelligence**
  - Adopted Python and Machine Learning Libraries like Scikit Learn, pandas, numpy and matplotlib to conduct feasibility study on the effects of Large-Scale Solar on operation.
  - Implemented several online monitoring systems, models and algorithms, resulting in millions in cost savings using predictive and condition-based maintenance.
  - OT/IT convergence: Integrated asset data from NoSQL Cloudera Hadoop Data Warehouse with operational data for advanced asset health monitoring with Impala.
  - Build reporting dashboards in Tableau and PI Vision, enabling smart prioritization of work orders and enabling asset performance and issue insights, saving 80% of manhours and maintaining 99% data availability.
  - Full-stack development of Web Applications, using Angular for front end, Bootstrap for styling, Flask for development of custom Web APIs and relational database in the backend.
- **Real-Time Data Platform for Wide Area Monitoring, Protection and Control Systems**
  - Contributed in the design and implementation of Special Protection Schemes (SPS) for Malaysian National Grid using a network of intelligent electronic devices for sensing, protection and control to mitigate contingency events.
  - Set up of Phasor Measurement Units for real-time monitoring of grid state.

**Internship as a Solar System Designer** **Plus Solar Sdn. Bhd** (Jul – Sep 2016)

- Optimization of solar panel installation and performed simulations and cost benefit analysis to ensure economically viable installations for customers.

**Industrial Placement as Research Engineer** **Sensium Healthcare (UK)** (Apr – Jun 2016)

- Researched and evaluated various machine learning models to estimate respiration rate from accelerometer data using wearable technology for remote monitoring and alert.

**Course Projects:**

- Designed and developed an Android Application for waste management, integrating IoT electronic sensors to Azure cloud hosted SQL database system.