

# Yit Wey Tam

## Graduate Aerospace Engineer

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**Modelling | Development | Diagnostics | Programming**

### PERSONAL STATEMENT

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A graduate with a strong foundation in aerospace engineering, data science and programming seeking opportunities to gain valuable industrial exposure and contribute to innovative projects. Committed to continuous learning and upskilling to stay current with the latest advancements in the field and passionate about leveraging technical knowledge and problem-solving skills to help deliver the company's mission.

### KEY SKILLS

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|--------------|-------------------|-----------------------|
| ✓ HTML & CSS | ✓ Version Control | ✓ Problem Solving     |
| ✓ Node.js    | ✓ jQuery          | ✓ Teamwork            |
| ✓ MongoDB    | ✓ EJS             | ✓ Attention to detail |
| ✓ Python     | ✓ Communication   | ✓ Project Management  |

### PROJECT EXPERIENCE

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#### Unmanned Aerial Vehicle Design – Performance Analyst & Material Analyst

##### Objective:

- Design and manufacture an unmanned aerial vehicle to fulfil the requirements set by BMFA within given constraints.

##### Involvement:

- Conducted in-depth performance analysis on various UAV designs through calculations and analysis to determine the most optimal design.
- Utilised CATIA to design structural components of the UAV, ensuring they are suitable for either 3D printing or laser cutting.
- Carried out material analysis to identify the optimal material for the UAV components, ensuring the structural rigidity and weight requirements are met.

##### Result:

- Successfully designed and constructed a fully functional unmanned aerial vehicle as a group that surpassed the core requirement set by BMFA.

**Technical Skills:** MATLAB, CATIA V5, Technical Drawing, 3D Printer, Laser Cutter

#### Light Tracking Solar Panel Model Using Arduino

##### Objective:

- Design and develop a low-cost and functional model using Arduino MEGA2560 microcontroller to demonstrate control system.

##### Involvement:

- Designed and iterated multiple prototype models of the solar panel rig using CATIA to achieve the optimal design.
- Manufactured and assembled the most feasible design to create a functional solar panel rig.
- Developed and implemented a control system using Simulink and Arduino MEGA microcontroller to effectively manipulate the solar panel's position in real time.

**Result:**

- Successfully developed and constructed a functional light tracking solar panel prototype model that demonstrated real-time control using an Arduino MEGA microcontroller and a control system developed in Simulink.

**Technical Skills:** MATLAB, Simulink, CATIA V5, Technical Drawing, 3D Printer, Laser Cutter

**Gas Turbine Gas Path Diagnostics Using Artificial Neural Network****Objective:**

- Contribute to the development of accurate and effective gas turbine diagnostics using artificial neural network.

**Involvement:**

- Developed a Trent-900 liked engine model which was used to generate over 800,000 engine measurement samples for training, testing and validation of neural network's performance.
- Preprocessed measurement samples through tasks such as data cleaning and feature engineering to enhance neural network's performance.
- Implemented a nested neural network architecture that incorporated 8 distinct neural networks, each specialised in different diagnostic tasks.
- Optimised the networks' hyperparameters using different search algorithms including random search and Bayesian optimisation to enhance the networks' performance.

**Result:**

- The developed diagnostics system demonstrated a high level of average accuracy in detecting (99%), isolating (99%) and quantifying single fault degradation along the gas path of a gas turbine.
- A user-friendly graphical user interface was developed to enhance usability and facilitate visualisation of the prediction.

**Technical Skills:** Python, MATLAB, Keras, TensorFlow, TensorBoard, Turbomatch, Pythia, Scikit-learn, Pandas, NumPy, Matplotlib, Seaborn, Tkinter, Git,

**EDUCATION**

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**MSc Thermal Power (Aerospace Propulsion)**

2021 - 2022

Cranfield University

**Grade:** Merit

**Thesis:** 'Gas Turbine Gas Path Diagnostics using Artificial Neural Network'.

**Symposium Paper Title:** 'History of Aircraft Engine Market'

**BEng (Hons) Aerospace Systems Engineering**

2016 - 2019

Coventry University

**Grade:** Upper Second Class

**Dissertation:** "Light Tracking Solar Panel Model Using Arduino"

**Group Project:** "Unmanned Aerial Vehicle Design"

**INTERESTS & EXTRACURRICULAR**

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- **Language:** English, Mandarin, Malay
- **Interests and Hobbies:** Aviation, Artificial Intelligence, Badminton, Recreational Scuba Diving, Web development