

# Tan Jun Ming

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**NATIONALITY**

Singaporean

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## Work Experience

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### Research and Development Engineer

2021 - Current

Agency for Science, Technology and Research, ARTC

- **Led technical projects in AI and automation** for implementation in engineering domain.
  - Led a 3-member team in the development of a document understanding application for an aerospace company in Singapore, achieving a 50% reduction in information retrieval time.
  - Developed an automated pipeline to extract structured information from engineering drawings using a fine-tuned YOLOv11 object detection model and the Florence-2 vision-language model.
  - Developed a web application that transforms engineering documents into a graph database for a chatbot application, implementing GraphRAG and an agentic framework with LangChain.
  - Designed, built and deployed an automated sand blasting machine in an aerospace organisation to reduce process time by up to 50%.
- Responsible for providing **technical updates to internal and external stakeholders** throughout the project lifecycle, including scoping, development, and final deliverables.
- **Presented at major events** such as Industrial Transformation ASIA-PACIFIC 2024 (ITAP 2024) and bi-annual technical meetings for ARTC industry members.

### Design & Structural Analysis Engineer

2018 - 2021

ST Engineering Aerospace

- Responsible for **mechanical design and stress analysis** of aircraft structures in both commercial and military projects.
  - Performed mechanical design and stress the A321 Passenger-to-Freighter programme and military projects.
  - Led the stress and structural analysis for the ACCESS lavatory development.
- **Led discussion and presentation** to aviation authority panel experts (EASA).
- **Presenter** and part of planning team for Singapore Airshow 2020.

## Education

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### Master of Technology in Artificial Intelligence Systems

2024

National University of Singapore

GPA: 4.79 / 5

#### Awards

1. SPH Gold Medal (Top Student in the Programme)
2. Best Capstone Project
3. NUS-ISS CEO's Honour List for 2 semesters

#### Selected Projects

1. *Intelligent Document Processing System* – [GitHub Link](#)
  - Developed an application to assist users in document understanding
  - Implemented various technologies - object detection, vector embeddings, RAG
2. *Object Detection System for Fasteners Identification* – [GitHub Link](#)
  - Developed an object detection model to assist in robotic disassembly application
  - Implemented object detection and segmentation using fine-tuned YOLOv8

### Bachelor of Engineering in Aerospace Engineering (Hons)

2018

Nanyang Technological University, Singapore

GPA: 4.87 / 5 (Highest Distinction)

## **Skills**

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**Programming:** Python, C++

**ML & DL:** PyTorch, LangChain, OpenCV, Scikit-learn

**Technologies:** Git, bash, Neo4j, VBA Excel

**Robotics:** ABB RAPID, UR, MiR

**Computer-Aided Design:** CATIA V5, Siemens NX, SolidWorks

**Languages:** English – fluent, Mandarin – fluent

## **Other Contributions & Positions**

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**Recreation Club Finance Head**, ARTC (2024-2025)

- Organisation of company-wide corporate and team-building events

**Intern Coordinator**, ARTC (2023-2025)

**Club Chairperson**, NTU CAC Contemporary Dance Club (2015-2016)

**Club President**, River Valley High School Dance Society (2010-2011)