

Chai Ming Ren John

2311 Bowditch St, CA 94704 • john_chai@mymail.sutd.edu.sg • (510) 365-1088

Education

Singapore University of Technology and Design

Singapore

BEng, MSc in Engineering Product Development & Technology Entrepreneurship

Sept 2023 – May 2028

- GPA: 4.52/5.0; Awarded SUTD STEP Scholarship
- Relevant Coursework: Engineering Design Innovation, Systems & Control, Structures & Materials, Circuits & Electronics, Computational Structures, Computational & Data Driven Engineering, Entrepreneurship

Projects

30.007 Engineering Design Innovation Course Project

Singapore

- Led a team of 7 students to develop novel curb and stair climbing powered wheelchair May 2025 – Aug 2025
- Fabricated full-scale prototype demonstrating curb-climbing and field-strip capability for transport

VEXU Robotics Competition, SUTD Organization of Autonomous Robotics (SOAR)

Singapore

- Developed control algorithm for novel 2-wheel holonomic swerve drive as Software Team Lead deployed at VEXU Asia Open Signature Event Dec 2024 – May 2025
- Designed compact scoring system within tight space constraints as hardware subsystem designer deployed at VEXU World Championships

Super Dario: Energy-Optimized 3D Printer

Singapore

- Reduced power consumption of Voron 0.1 3D Printer by 28% through waste heat recovery modifications Sept 2024 – Dec 2024

Work & Leadership Experience

CTO and Co-Founder

Singapore

PolyMate Private Limited

Mar 2024 – present

- Leads product R&D for novel filament drying technology
- Established global supplier network and managed procurement for client projects
- Developed Maker Skills workshops for 900+ participants in STEAMunity program

Space Systems Engineering Intern

Singapore

Aliena Private Limited

Sept 2025 – Dec 2025

- Developed simulation & characterization tools for Propellant Management Assembly (PMA) on MUSIC Hall-Effect Thruster
- Supported PMA design, manufacturing, and troubleshooting for satellite engineering model

Founder, SUTD Space Bar (Aerospace Interest Group)

Singapore

Singapore University of Technology and Design

Jan 2025 – present

- Founded aerospace interest group with 100+ members
- Interest group carried out 2 successful rocket launches within 6 months

Armament Technician, Corporal First Class

Singapore

Singapore Armed Forces

Jan 2021 – Nov 2022

- Led team of technicians maintaining armored vehicle fleet, ensuring operational readiness
- Awarded Best Soldier of the Month (Nov 2021) and 2x Commanding Officer Coin for exemplary performance

Skills, Activities & Interests

Languages: Fluent in English and Mandarin

Technical Skills: CAD: Autodesk Fusion, SolidWorks; PCB Design: KiCAD; Manufacturing: 3D Printing, CNC, Laser Cutting; Programming: C++, Python, C, Java, JavaScript, SQL

Activities: President of SUTD Chinese Orchestra (2024); Project Advisor & Software Lead for SOAR

Interests: Additive manufacturing, autonomous robotics, and aerospace systems