

Tan Zong Hong

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EXPERIENCE

Land Transport Authority (LTA)

Executive Engineer (Fare System - System Architecture)

Apr 2021 – Present

- Initiated the use of simulation software to perform feasibility studies of the proposed system architecture which improves architecture design and saves on re-design costs.
- Produced and maintained application interfaces (message queue and web service calls) and system design specifications for development teams and ensured smooth and secure end-to-end integration of the different fare systems.
- Took the lead as System Architect in the project lifecycle by assessing requirements, designing architecture, conducting walkthrough, and supporting development teams.

Engineer (Fare System - Test Automation and System Architecture)

Aug 2019 – Mar 2021

- Involved in automated regression throughput test for contactless card by making use of robotic arm.
- Created test plans and test cases for software application, conducted manual test and participated in System Integration Test and User Acceptance Test.
- Involved in the architecture design of fare system in public transportation from front-end devices, payment gateway, acquirer, issuer and backend systems.
- Coordinated with requirements, software development, project, security team and external stakeholders to provide technical solutions and designs in order to implement business and system requirements of fare system.

Pepperl+Fuchs Pte. Ltd.

Sep 2017 – Aug 2018

Internship – Process Engineer

- Played an active role in processes such as preventive maintenance and repair. A handbook on “Total Preventive Maintenance and Repair” was created for Pepperl+Fuchs global reference.
- Took on the lead for a project on design of experiment (DOE) on hot embossing process for surge protection devices. This led to a quality assurance process and criteria on the manufacturing process of the surge protection device.

Singapore Armed Forces

Jun 2013 – Jun 2015

Subject Military Expert, Infantry Leader - Sergeant

- Trained batches of recruits to become competent and confident soldiers through conducting military lessons and protocol.
- Liaised with at least 4 other teams in subject military expert (SME) training protocol.

EDUCATION

Singapore Institute of Technology and DigiPen Institute of Technology (Singapore)

CGPA: 4.31 / 5.0, Honours with Distinction (Second Class, Upper)

Sep 2015 – May 2019

Bachelor of Engineering with Honours in Systems Engineering (ElectroMechanical Systems)

- A multidisciplinary degree programme that incorporates the fields of mechanical, electrical, electronic, and computer engineering with a holistic approach to system development.
- Recipient of Dual Studies Sponsorship Award, a collaboration with Economic Development Board (EDB) and German Companies, which aims to empower students to integrate knowledge and skills gained in SIT by working with the sponsor companies.

- Trained as an international standard system engineer: completed Systems and Software Engineering (INCOSE¹ ISO 15288), Requirements Engineering (ISO 29148), System Architecture (INCOSE-TP-2010-006-02.1) and Project Management (PMBOK² standard)

Temasek Polytechnic

CGPA: 3.31/4.0

Apr 2010 - Feb 2013

Diploma in Electronics

- Equipped with the knowledge of electronic devices, circuits and systems with a strong emphasis on embedded systems, networking, communications and control.

SELECTIVE PROJECTS

System Model for Hardware Acquisition

Sep 2018 - Apr 2019

- Development of a System Model using Model Based System Engineering methodology that facilitates the incorporation of System Engineering practices into PSA's acquisition process.
- Fabricated scaled model of a yard crane, used laser sensors, smart servo motors with C language for software programming (GPIO, Multicore, UART)
- Elicited and refined stakeholder/systems requirements, transform requirement statements into requirement model and generate requirement documents from the model.

Automated Luggage Check-in System

Sep 2016 - Apr 2017

- Development of a life-sized luggage trolley system that can transport user's luggage autonomously with obstacle detection and avoidance.
- Integrated obstacle avoidance, Wi-Fi/Bluetooth positioning, Inertial Measurement Unit (IMU), Proportional–Integral–Derivative (PID) controller.

A Quadcopter Project

Jan 2016 – Apr 2016

- Development of a quadcopter having a kill switch and parachute to deliver packages
- Fabricated and designed quadcopter body including calculation of shroud length, parachute shape, materials with folding method to form into safety system with Embedded ARM C language for software programming (Timer, UART, interrupts and more interfaces)
- Futaba remote controller, servo motors (to trigger parachute), ARM LPC1769 MCU were used with Keil microVision IDE.

CERTIFICATION

Associate Systems Engineering Professional (ASEP), INCOSE

Apr 2019

TECHNICAL SKILLS

Software: Autodesk EAGLE (PCB Design), Creo Parametric (CAD), Flexsim (Simulation), Sparx Enterprise Architect

Programming Language: Assembly (ARM core), C, C++, JavaScript

Modelling Language: Business Process Modelling Notation (BPMN), Unified Modelling Language (UML), Systems Modelling Language (SysML)

¹ International Council on Systems Engineering

² Project Management Body of Knowledge