

## EDUCATION

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### Nanyang Technological University (NTU)

May 2022 – May 2025 (Expected)

- **Bachelor of Engineering (Electrical and Electronic Engineering)**
- Specialization: **Info-Communication Engineering (Computer Engineering)**
- Relevant Modules: (1) Introduction to Data Science and Artificial Intelligence (2) Data Structure and Algorithms (3) Cybersecurity (4) Computer Communications (5) Software Engineering (6) Database Systems (7) Enterprise Network Design

### Singapore Polytechnic (SP)

Apr 2018 – Apr 2020

- **Diploma in Electrical and Electronic Engineering**
- Relevant Modules: (1) PLC Applications (2) Mobile Application Development (3) Client-Server Application Development (4) Network & Protocols

## INTERNSHIP & WORK EXPERIENCE

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### Codetism Co., Ltd (Thailand), Back-End Developer Intern (Overseas)

May 2024 – Jul 2024

- Developed RESTful APIs using Java, Spring Boot, and documented them using Swagger to support front-end usage.
- Created data endpoints with **GET, PUT, POST, DELETE** operations and applied unit testing to ensure reliability.
- Collaborated with back-end teams through Bitbucket for code reviews and SourceTree for version control and branching accelerating process and enabling faster work done.
- Authored API usage documentation to support onboarding and improving efficiency to the front-end developers.

### Artisanal Keycap Business - Klaykaps, Co-Founder & Full Stack Web Developer

Mar 2021 – Dec 2023

- Integrated Python Programming with Shopify API to optimize E-commerce invoicing operation efficiency; achieved 75% reduction in processing time.
- Designed and deployed a proprietary Raffle System handling 1000+ entries, integrating identity verification and scheduled releases.
- Applied 4 Software programming (I.e., **HTML, CSS, JavaScript, PHP**) with Shopify's API to design, code and develop website store for existing customers.
- Engineered a Global Countdown Timer by scraping timezone data and anchoring the timer to it, preventing user-side manipulation.
- Built and deployed a Python-based Telegram Bot on a Windows server (Apache + WAMP) to automate daily server health notifications; successfully streamlined workflow by eliminating tedious website checking.

### PlayFacto School, Part-time Trainer (Vex GO & Junior Inventor)

May 2023 – Jul 2023

- Imparted knowledge, skill, and ability related Block Programming techniques to 100+ students prior to competition participation; leveraged game tool "Minecraft Education" to hone students' software programming conceptualization.
- Received positive feedback from parents and Centre Head for excellent work commitment in nurturing and development in student's learning.

### Mvizn Pte Ltd, Assistant Software Engineer

Feb 2020 – Oct 2020

- Contributed to the deployment of AI-based machine vision systems across 3 industrial projects with on-site servers and camera installation.
- Obtained Work-at-Heights Certification and supervised junior interns by transferring practical knowledge on AI system deployment.
- Installed and maintained AI systems at client sites, supporting real-time testing, calibration, and performance tuning.
- Supported end-to-end testing of AI systems until final delivery, logging test results and resolving detected issues.

### Mvizn Pte Ltd, Software Engineer Intern

Sep 2019 – Feb 2020

- Assisted in Linux server setup, tagging, and integration for crane-based machine vision systems.
- Supported AI machine vision projects, including training YOLO- and TensorFlow-based models for chassis lift prevention and twist-lock cone detection, with hands-on involvement in data preparation, labeling, and performance evaluation.
- Built and configured high-performance servers, including Linux OS installation and setup of project-specific environments.
- Conducted site visits alongside senior engineers for system upgrades, installation, and troubleshooting, ensuring minimal downtime.

### Swee Lee Music Company, Electrical Engineering Intern

Apr 2017 – Jun 2017

- Conducted equipment maintenance and testing for Extron A/V systems at the National University of Singapore (NUS).
- Directed installation of cables and server projects for major clients, including Shangri-La Hotel, Changi Airport Group, and Mediacorp.

- Shenzhen STS Microelectronics (Shenzhen, China), Engineering Intern (Overseas)** Nov 2016 – Dec 2016
- Inspected 1000+ printed circuit boards (PCBs) to ensure quality control post-wafer saw and pre-molding processes.
  - Acquired comprehensive knowledge and expertise in microchip manufacturing process; achieved 10% reduction in production defects.
  - Executed routine machine inspection to identify and prevent undesirable issues (e.g. technical faults) occurrence by 80%.

- Fokker Services Asia, Aerospace Engineer Internship** Jul 2014 – Dec 2014
- Managed and supervised maintenance for 40+ aircraft (e.g., cockpit inspection, repairs, structural, mechanical).
  - Managed inventory of 1,000+ tools and coordinated flow of incoming and outgoing aircraft parts shipments.

## ACADEMIC PROJECTS / PERSONAL PROJECTS

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- NTU-EEE Personal Project: ***Swaptoru, NTU Stars*** Jan 2023 – Aug 2025
- Developed a **Telegram bot** with Selenium automation to streamline NTU STARS course index swapping.
  - Implemented **time-windowed execution (10:30 AM–10:00 PM SGT)**, **daily auto-restart scheduler**, and a **watchdog thread** for freeze detection and auto-recovery.
  - Secured the system with **access control (one-time access code)**, restricted command set during swap, and **safe credential handling** (temporary in-memory use, password message auto-deletion).
  - Built with **Python, Selenium, and pyTelegramBotAPI**, featuring precise error handling, logging, and **thread-safe concurrency controls**.
  - Enabled **hands-free course index monitoring & swapping** with automated retries and real-time Telegram status updates.

- NTU-EEE Final Year Project: ***Design and Develop of a 2D Video Game*** May 2024 – May 2025
- Designed and developed a **2D grid-based zombie survival game** with an immersive storyline, built in **Unity**.
  - Implemented gameplay mechanics with Zombie AI behaviours and players interactions.(maintaining distance, dynamic layering), enhancing realism and challenge.
  - Engineered **core gameplay systems** (combat, scavenging, player interactions) and integrated animations, sound effects, and scene persistence.
  - Created and optimized **level designs** to balance performance and engagement, applying object pooling and crowd dispersion techniques.

- NTU-EEE Module: ***Introduction to Data Science and Artificial Intelligence*** Jan 2023 – Apr 2023
- Module Project: ***Prediction of Diabetes (Team Leader of 4)***
- Deployed **Python Programming** with 6 Machine Learning Models (i.e., Linear Regression, Random Forest, Decision Tree, K-means Clustering, K-Nearest Neighbour, Keras) to clean and train Kaggle Dataset for predicting accurately if patients with diabetes.
  - Concluded that Keras was ideal model with 85% prediction accuracy that was significantly correlated with critical health factors (e.g., Glucose, Blood Pressure, Insulin, BMI).

## CO-CURRICULAR ACTIVITIES

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- NTU Pool Club, Member (Varsity Team)** Jan 2022 – Jun 2025
- Represented NTU SUNIG in Team 2 and advanced to Finals.

- SP Pool Club, Member (School Team)** Jan 2018 – Jan 2020
- Represented SP in RP 9-ball Pool Invitational.
  - Represented SP in SIM 8-ball Pool Invitational.

## SKILLS

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- **Languages:** Proficient in English and Chinese (Mandarin)
- **Programming Language:** C, C#, C++, Python, HTML, CSS, Java, JavaScript, TypeScript, PHP, MYSQL, MATLAB, MS-DOS
- **Software Applications:** Apache Server, Android Studio, Unity, Flutter, Microsoft Visual Studio, Visual Studio Code, XAMPP, WampServer, Apache NetBeans, Jupyter Notebook, LTSpice, Arduino, MATLAB, GitHub, Microsoft Office 2023, Git, SourceTree, IntelliJ IDEA
- **IT Tools / Frameworks / Libraries:** Pandas, NumPy, Telebot, Runpy, Selenium, Matplotlib, Seaborn, Tensorflow, SSL, Vercel, Shopify, Spring Boot, API
- **A.I. & Machine Learning:** Random Forest, Decision Tree, Keras, YOLO, K-Nearest Neighbour, K-means, Linear Regression
- **Operating Systems:** Linux, Windows, MacOS
- **License:** Class 3 Driving License