Sahassapon Manussawin
Mobile Phone: (+65) 8833 8757 / Email: manussawin.sahassapon@gmail.com
Website: manussawin.com / GitHub: Milky066

EDUCATION

Nanyang Technological University (NTU)   Aug 2021 – Jun 2024
School of Electrical and Electronic Engineering
- **Bachelor of Engineering (Information Engineering with Media)**
- **Honours (Distinction)** CGPA: 4.33 / 5.00
- Relevant Modules: (1) *Object Orient Programming* [**Java**] (2) *Data Structures and Algorithms*
  (3) *Introduction to Data Science and Artificial Intelligence* [**Python**] (4) *Software Engineering*

Virtual Training and Learning & Development
- Udemy Relevant Modules: (1) *Unity (2) Discrete Mathematics (3) JavaScript (4) C# Masterclass*

Singapore Polytechnic (SP)   Apr 2018 – May 2021
School of Mechanical and Aeronautical Engineering
- **Diploma in Aeronautical Engineering**

INTERNSHIP EXPERIENCE

UnaBiz, *Firmware Engineering Intern*   Jan 2023 – Jun 2023
Internship Project: ***ESP32 based Thermal Camera with Image Recognition***
- Worked in low-level, resource-constraint ESP32 Microcontroller with Lepton 3.5 Thermal camera for two purposes: (1) *alerting housekeeper to clean wet floor to prevent accidents* (2) *alerting cleaners about fallen persons in toilets for immediate action.*
- Integrated Machine Learning Image Recognition capabilities to run natively on microcontroller.
- Developed relational database for archiving thermal data for updating Machine Learning Model (i.e. Convolutional Neural Network).
- Acquired knowledge, skill, and ability with insights into low-level system optimisation with two software programs (i.e., **C Language, C++**).
- Adapted and applied incremental framework to develop, train, test and deploy Machine Learning Models.
- Deepened understanding of the Internet-of-Things industry and low-level software designing.
- Wrote custom operating system based on freeRtos kernel.

Singapore Polytechnic, *Virtual Reality Intern*   Sep 2020 – Mar 2021
Internship Project: ***VR for Republic of Singapore Airforce***
- Constructed 3-D render of RSAF hangar environment and optimized it to run in VR Header HTC Vive.
- Involved actively in negotiation with clients to reach win-win terms and conditions.
- Developed VR software for training hangar workers to detect foreign objects.
- Incorporated a dynamic environment system to make every training session unique.
- Utilised **C# Programming** with VRTK framework and Unity Engine.

ACADEMIC PROJECTS / MODULE PROJECTS / PERSONAL PROJECT

Personal Project: ***TFT LCD Screen Driver for ESP32***   Jan 2024 – **Jun 2024**
- Wrote a driver code for ESP32 microcontroller in **C Programming**
- Supports 3-wire SPI communication protocol with MSB first
- Utilised Hardware-Level Graphic register access with 16-bit RGB support

NTU-IEM FYP: ***2.5D Narrative Platformer Puzzle Game*** (**Team Leader** of 3)   May 2023 – May 2024
- **C# Programming** with Unity Engine to design, code and create Single Player Puzzle Game.
- Responsible for character controller system, level design and puzzle design.
- Deploy software "Blender" to model and animate Puzzles and Characters

Personal Project: ***Full Stack Web Development with Next.js framework***   May 2023 – Jan 2024
- Employed 3 software programs (i.e., JavaScript, HTML, CSS) with frameworks (i.e., React, Next.js) to design, code and develop (frontend, backend) website for blogging and portfolio.
- Utilised MongoDB as a noSQL database.

NTU-IEM Design and Innovation Project: ***ReactNative Carpooling***   Jan 2022 – Apr 2022
Application (**Team Leader** of 10)
- Deployed JavaScript Programming with React Native framework to design, code and develop application for group users that travel in similar route together for car sharing within 12 weeks.
- Integrated with MongoDB database.

NTU-IEM Design and Innovation of Project: ***Unity Tower Defence Video Game***   Jan 2022 – Feb 2022
- Strengthened the coding conventions.
- Applied **C# Language** and **Object-Oriented Programming** to develop fully playable "Tower Defence Game" within 4 weeks.

NTU Garage: *Animal Proximity Alert Device* (**Team Leader** of 5)   Sep 2021 – Feb 2022
- Applied **C++ Programming** to construct device that visually detected presence of nearby animals.
- Gained insight into inner working of Machine Learning and Image Recognition.
- Adapted Raspberry PI microprocessor to fit project needs.

OVERSEAS (SUMMER) EXCHANGE PROGRAMME

University College London (UCL)   Jun 2023 – Aug 2023
- Modules Accomplishment: (1) *Cybersecurity Risk Management* (2) *Data-Driven Web-based Application*
- Honed cross-cultural knowledge by embracing individual differences concerning traditions, norms, values, practices and beliefs in a foreign country
- Recognized the importance of diversity due to knowledge transferring and sharing that sparked creativity

LEADERSHIP / CO-CURRICULAR ACTIVITIES / COMMUNITY INVOLVEMENT

NTU Marvel Club@EEE, Dual Roles: (1) *Vice President* (2) *Technical Lead*   Jun 2023 – **Present**
- Construct and maintain the club website.
- Manage and collaborate events with other clubs.
- Conduct workshop related to Unity, Character Designing and Modelling.

NTU Hall 11 Band, *Lead Guitarist*   Jun 2021 – Jun 2023
- Responsible for providing licks and riffs to songs.

SP Guitarists, Dual Roles: (1) *Secretary* (2) *Prime Guitarist*   Jun 2018 – Jun 2020

ACHIEVEMENTS / AWARDS / RECOGNITION

- Valedictorian Nominee   2024
- NTU EEE Excellent Award Nominee   2024
- UCL Summer School Student Representative   2023
- IAC Archery Competitor   2023

SKILLS

- **Software Programming:** C Language, C++, C#, SQL, HTML, CSS, Java, JavaScript, ARM Assembly, Python
- **Software Applications**: Unity, Blender, MongoDB, MySQL, GitHub, CMake
- **IT Tools / Libraries / Frameworks**: Next.JS, ReactJS, React Native, Tensorflow, Tensorflow Lite, FreeRtos, ESP-IDF, Pandas, NumPy
- **A.I. & Machine Learning:** Convolutional Neural Network, Linear Regression, Support Vector Machine, Clustering, Nearest Neighbour, Deep Neural Network