TOTSUKA TOMOFUMI

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EDUCATION

National University of Singapore Aug 2021 - Present
Bachelor of Computing (Honours) (Exp. Apr 2025)

- Major in Computer Science
- Relevant Coursework:
  Programming Methodology, Programming Methodology II, Data Structures and Algorithms, Software Engineering, Computer Organisation, Introduction to Operating Systems, Database Systems, Introduction to Information Security, Introduction to AI and Machine Learning, Design and Analysis of Algorithms, Foundations of Machine Learning, Natural Language Processing, Computer Vision and Pattern Recognition

Chulalongkorn University (NUS Student Exchange Programme) Aug 2023 - Dec 2023
Bachelor of Engineering in Information and Communication Engineering (International Program)

- Relevant Coursework:
  Internet of Things, User Interface Design, Principles of Information System, Netcentric Architecture

EMPLOYMENT

Rohde & Schwarz May 2024 - Aug 2024
Intern, Software Developer

- Co-developed a real-time, web-based, lab management dashboard using React + .NET Core with SignalR to automate lab testing workflows.
- Co-implemented .NET Core microservices with gRPC endpoints to interface with legacy lab software and employed service discovery with Consul to streamline microservice lookup.
- Leveraged Knowledge: TypeScript, React, Redux, C#, ASP.NET Core 8.0, SignalR, gRPC, Consul, Git, GitLab

PROJECTS

Battleship (github.com/battleship-web/battleship)

- Co-implemented a real-time, online multiplayer, browser-based “Battleship” clone in JavaScript. Worked on the development of Node.js with Express backend.
- Employed Socket.IO and Redis to facilitate real-time player actions and game state updates.
- Integrated Mongoose with MongoDB for managing persistent player account data.
- Utilised: JavaScript, Express, Socket.IO, Redis, Mongoose, Git, GitHub

Smart Trash Can

- Co-developed a IoT-based trash can using STM32 MCU and Raspberry Pi with cross-board serial communication to sort bottles and cans. Handled software implementation and integration.
- Interfaced servos and sensors using techniques such as PWM modulation and ADC conversion, calibrated for accurate sensor feedback, and precise servo control in sorting.
- Utilised: C, Python, STM32, Raspberry Pi

myStudent (ay2223s1-cs2103t-f12-4.github.io/tp/)

- Co-developed a Java-based desktop application for tuition centres to manage their students, tutors and classes. Responsible for application logic.
- Utilised: Java, JavaFX, JUnit, Git, GitHub, Codecov

SKILLS

Programming Languages: JavaScript/Typescript, Python, Java, C#, C, MIPS, HTML/CSS
Frameworks & Libraries: React, Redux, Tailwind, ASP.NET Core 8.0, SignalR, gRPC, React Bootstrap, Express, Socket.IO
Machine Learning: NumPy, Pandas, PyTorch
Tools & Platforms: GitHub, GitLab, Redis, Consul, PostgreSQL, Unix, Bash
Hardware: STM32, Raspberry Pi