# TOTSUKA TOMOFUMI

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## EDUCATION

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

**Personal Website:** totsukatomofumi.com (for additional information)

**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, Three.js, React Three Fiber
**Machine Learning:** NumPy, Pandas, PyTorch
**Tools & Platforms:** GitHub, GitLab, Redis, Consul, PostgreSQL, Unix, Bash
**Hardware:** STM32, Raspberry Pi