

Adi Nata

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[LinkedIn](#) | [GitHub](#) | [Portfolio](#)



PERSONAL SUMMARY

Accomplished software engineer specializing in embedded systems, full-stack development, and IT infrastructure. Demonstrates a proven track record in manufacturing execution systems (MES), high-performance C/C++ libraries, and enterprise-grade web application development. Proficient in cloud technologies, ISO-compliant IT policies, and process optimization.

SKILLS

- Programming Languages: C, C++, C#, Python, JavaScript, Java.
- Web development: React, Express, HTML, Tailwind, Spring Boot, .NET.
- Database: PostgreSQL, MongoDB, Redis.
- DevOps: Docker, Kubernetes, GitHub Actions.
- Supporting Tools: Git, Nginx, Linux, CMake, Make, Gtest, AWS, Oracle Cloud.
- Core Competencies: Problem Solving, Communication, Collaboration, Adaptability, Mobility.

EXPERIENCES

Software Engineer

Vital Thin Film Materials, Apr 2024 - Present

- Developed MES web applications using React, Node, and PostgreSQL for process monitoring, achieving an 8% reduction in manufacturing process time and enhancing data reliability.
- Connected MES with FANUC CNC machine data through HTTP pooling and web socket integration with the React frontend.
- Configured network infrastructure, including Meraki router and firewall setup, wireless heatmap creation, and VPN connection planning.
- Established server room and IDF setup in compliance with ISO best practices, focusing on security, environmental conditions, power requirements, and monitoring equipment.
- Implemented a document control and approval system with Microsoft Power Automate, reducing average document approval time by 3 days.
- Authored IT policies such as Disaster Recovery Plan, Incident Response Plan, and Cyber Security Awareness, ensuring compliance with ISO 27701 and Malaysia PDPA standards.
- Facilitated and negotiated the procurement of IT infrastructure and applications valued at over RM 5 million.

Embedded Software Engineer

Continental Automotive, Feb 2023 - Mar 2024

- Developed a high-performance C and C++ network communication library to enable secure HTTP and MQTT connections between vehicle firmware and central servers, following Agile methodology.
- Implemented unit tests using Google Test, achieving 98% of line coverage and 99% of branch coverage, ensuring code reliability in compliance with ASPICE and MISRA standards

- Automated module flashing and testing using Arduino to simulate physical button presses and toggles on the load box, facilitating overnight testing and reducing average testing time by 10% for common tests.
- Enhanced and automated the firmware build process by optimizing the CMake command and creating bash scripts, reducing compilation and build time from 15 minutes to 5 minutes.

EDUCATION

National University of Singapore (NUS), Computer Engineering

- Minor: Financial Mathematics.
- Activities: Engineering Student Ambassadors.
- CAP: 4.17/5 (Second Class Honors).

St Andrew's Junior College, A-Level

- Activities: Talent Development Program, Student Council.
- Obtained Merit for H3 course at NTU: Semiconductor Physics & Devices (PHYS0001).

CERTIFICATIONS

- Oracle Cloud Infrastructure 2025 Certified Developer Professional
- Oracle Cloud Infrastructure 2025 Certified Data Science Professional
- Oracle Cloud Infrastructure 2025 Certified Network Professional
- Certified SAlFe 6 Practitioner

PROJECTS

Laser Tag

- Multiplayer, multithreaded, handheld laser tag system.
- Tech Stack: Python, C, Arduino.

BestFit

- E-commerce apparel platform with size recommendation feature.
- Tech Stack: React, Express, MongoDB, AWS S3, Stripe, Python sklearn.

ADDITIONAL EXPERIENCES

Research Assistant

National University of Singapore, Jan 2022 - Jun 2022

- Developed a CNN model to detect malaria-infected cells with 91% accuracy and 95% precision.

Business Analyst Intern

Workforce Optimizer Pte Ltd, Jun 2021 - Dec 2021

- Enhanced LSTM forecasting model for manpower allocation, reducing RMSE from 3.4 to 1.2.

Teaching Assistant

National University of Singapore, Jun 2020 – Jun 2022

- Mentored over 100 students in C programming with an average student rating of 4.7/5.

LANGUAGES

- English (Bilingual)
- Indonesian (Native)
- Malay (Native)
- Mandarin (Conversational)