Ha Dao

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Education

SeAMK - Seinäjoki University of Applied Science **Expected Graduation: May 2026**
Bachelor of Engineering, Automation Engineering *GPA: 4.5/5*

- **Coursework**: C++ Programming , Object-oriented Programming , Data Structures and Algorithms , Server-side Programming , Network Programming, Advanced Electronics , Laboratory Assignments in Electronics.

Work Experience

Seinajoki University of Applied Sciences, Seinajoki **October 2025 – Present**
Mobile Robotics Intern

- Integrated a multi-sensor localization system using ROS 2 for differential-drive robots, successfully improving positioning precision and mitigating system drift through the fusion of IMU, wheel encoders, LiDAR, and UWB.
- Implemented an EKF-based sensor fusion algorithm for robust real-time pose estimation, system calibration, and sensor synchronization.
- Conducted experimental validation and performance evaluation to support research outcomes, while enhancing development and debugging workflows using tools like Foxglove for a UGV project.

Personal Projects

E-commerce App | *Website* | *Source code* **Next.js, TypeScript, ExpressJS, MongoDB**

- Developed a full-stack e-commerce web application with a **responsive UI** and **scalable backend** using Next.js, TypeScript, Tailwind CSS, Shadcn UI, Express.js, and MongoDB.
- Implemented **JWT-based authentication** with Passport.js and bcrypt along with **dynamic product sorting** and **advanced filtering**; **cart functionality** and **token-based user flows** are under development.
- Planned features include secure checkout with Stripe, order management, advanced filtering, and email notifications.

Dual-Pump Water Tank Control System (Simulation) **TIA Portal, Siemens S7 PLC, HMI, WinCC**

- Simulated a dual-pump water tank system with alternating pump control logic based on 4–20mA level sensor and float switch inputs.
- Programmed PLC logic for pump alternation, fault detection, and low-level alarm handling.
- Designed HMI to visualize tank levels, system status, and manual/automatic pump operation.

Technical Skills

- **PLC & HMI Programming:** Siemens TIA Portal, Beckhoff Twincat (Twincat HMI), WinCC
- **Simulation & Modeling:** MATLAB, Simulink
- **CAD & Design Tools:** Solid Edge, EPLAN
- **Robotics:** Robot Operating System (ROS 2), sensors (IMU, Wheel Encoders, UWB, Lidar, RGB Camera)
- **Programming & Software:** C++, Python, JavaScript, Arduino, MATLAB

Certifications

- Full Stack Open - University Of Helsinki
- Web Development Bootcamp - Udemy