

Timothy Adu

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SUMMARY

My profound passion extends seamlessly across the realms of embedded hardware and software, with a profound appreciation for the intricate interplay between the two domains. Embedded systems represent the nexus of this convergence, offering a compelling arena where I find immense fulfillment.

SKILLS

→ PROGRAMMING/SCRIPTING LANGUAGES:

C | C++ | Matlab | Python | Bash

→ COMMUNICATION PROTOCOLS:

BLE | NFC | CANBUS | I2C | SPI | UART | WiFi | LTE-M | NB-IoT | CAT1.bis | LoRa

→ DEVELOPMENT METHODOLOGIES:

Embedded Software | Firmware | Devops | CI/CD | Test Driven Development | Quality Assurance | Hardware Bringup | Low Power Embedded Design | Systems Architecture/Design | Project Management | Documentation | Agile/Scrum | UML | Driver & Middleware Development

→ DEVELOPMENT HARDWARE PLATFORMS:

STM32 | NRF52 | NRF91 | ESP32 | NXP | ATSAMD | ATMEGA | PIC32 | ARM | RaspberryPi

→ DEVELOPMENT SYSTEM PLATFORMS:

FreeRTOS | Bare Metal | NRF5 SDK | NRF Connect SDK | MPLAB Harmony | MCUXpresso SDK | GCC | STM32CubeMX

→ DEVELOPMENT SOFTWARE TOOLS:

MPLABX-IDE | VsCode | Eclipse | STM32CUBE-IDE | SEGGER Embedded Studio | SEGGER Jlink | SEGGER SystemView | PLANTUML | Git | JIRA | GitHub | Gitlab | KiCAD | Doxygen | SonarQube | Docker | CodeSonar | PyTest | Jenkins

→ CODING STANDARDS:

Barr-C | MISRA-C

EXPERIENCE

Hardware Engineering Technical Lead

Tector

March 2024 – Present, Copenhagen, Denmark

- Leading hardware design and development of new low power IoT sensors.
- Develop new and maintain existing device firmware.
- Project lifecycle management and reporting (project timelines, reports, weekly updates).
- Management product certification processes and requirements.
- Develop and ensure best practices with regard to electronics, firmware and mechanical development.
- Define, oversee and perform quality assurance tests to ensure product reliability and performance.
- Define and manage hardware operations processes (Purchase orders, inventory tracking, etc).
- Close and effective collaboration with external suppliers and consultants.

Founder | Mentor | Hardware Startup Advisor | Embedded Systems Consultant

Helix Embedded

July 2023 – Present, Copenhagen, Denmark

- Coaching/mentoring of students studying Embedded Systems Engineering. Coaching 2-3 students every quarter.
- Sparring and mentoring hardware startups. Mentored 3 startups to-date.
- Engineering consulting – product development, embedded software development and architecture development.

Senior Embedded Software Engineer

EMRI A/S

August 2023 – February 2024, Copenhagen, Denmark

- Developed embedded software for marine autopilot navigation systems.
- Developed and enforced modernized workflow ensuring the team worked agile.
- Developed and maintained automated test platform.

Embedded Systems Technical Lead

Donkey Republic

November 2021 – August 2023, Copenhagen, Denmark

- Assumed the pivotal role of Product Owner in spearheading the comprehensive development of a bike control system, overseeing all aspects from inception to execution.
- Provided leadership in the formulation and execution of hardware and firmware architecture and design strategies, applied across 4 projects, ensuring robust and high-performance systems.
- Conducted meticulous research and executed a discerning process for the selection of electronic components, underpinning product excellence.
- Cultivated robust relationships with 15 distributors and meticulously managed the supply chain, ensuring timely access to critical resources.
- Spearheaded the establishment of PCBA programming and test hardware for 10k+ production units, along with the development of rigorous QA procedures for the EMS provider, ensuring product quality.
- Undertook a comprehensive codebase refactoring and cleanup initiative, optimizing code quality and maintainability for long-term sustainability.

Lead Firmware Engineer

Nordsense

December 2018 – October 2021, Copenhagen, Denmark

- Orchestrated a dedicated team comprising 2 engineers and 3 consultants, steering the development of cutting-edge sensor hardware solutions.
- Development and maintenance of firmware for both existing and pioneering products, ensuring their optimal performance. Maintained 2 hardware platforms.
- Assumed a central role in product development, effectively managing and meticulously overseeing requirements throughout the project lifecycle.
- Pioneered the establishment of a robust CI/CD workflow, elevating code quality and development efficiency.
- Architected a scalable firmware framework adaptable across 3 development projects, fostering efficiency and reusability.
- Exemplified meticulous documentation practices by extensively documenting the codebase and associated processes, facilitating seamless knowledge transfer and maintenance.

Embedded Software Engineer

WSAudiology

February 2018 – December 2018, Lyngø, Denmark

- Demonstrated proficiency in the comprehensive lifecycle management of embedded software for hearing aids, encompassing analysis, design, implementation, and rigorous testing of 2 product platforms.
- Conceptualized and engineered a robust test architecture and framework to enable continuous integration, delivery, and automated testing, bolstering development efficiency.
- Implemented an advanced toolset for static application security testing, a critical measure to meet the stringent standards inherent in medical device development.
- Exercised leadership as a Scrum Master, managing an external team of 4 test developers, ensuring streamlined collaboration and the achievement of project objectives.

Embedded Software Engineer

Sennheiser

August 2014 – January 2018, Ballerup, Denmark

- Spearheaded end-to-end responsibilities, encompassing analysis, design, implementation, rigorous testing, meticulous documentation, and seamless integration of embedded software tailored for CCO solutions. Developed software on 3 product lines.
 - Orchestrated the adept integration of complex systems, harnessing the power of cutting-edge continuous integration tools to optimize project workflows.
 - Pioneered the development and perpetual maintenance of sophisticated test automation solutions for 3 different projects, elevating the precision and efficiency of the testing process.
 - Exemplified strategic prowess through in-depth requirement analysis and the meticulous design of software modules, aligning each component seamlessly with project objectives.
 - Innovated and engineered state-of-the-art Electronic Hook Switch (EHS) drivers, enabling seamless communication with a diverse array of desk phones, expanding product compatibility horizons.
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CERTIFICATIONS

Cellular IoT Fundamentals

Mpirical • 2021

- Certified in development of IoT solutions, with focus on cellular wireless technologies.

Engineering Project Management

Rice University • 2021

- Certified in the methodologies and procedures of managing engineering projects.

4G Broadband LTE

IEEE • 2019

- Certified in development of IoT products using 4G LTE/LTE-M/NB-IoT

Bluetooth Low Energy (BLE) Training

Widex • 2018

- Certified in development of BLE solutions.

Technical Writing for Scientists and Engineers

IEEE • 2017

- Certified in standardized methodologies for technical documentation with focus on embedded systems.

EDUCATION

Bachelor of Engineering

Technical University of Denmark • Copenhagen, Denmark • 2014

- Awarded partial scholarship due to excellent performance in engineering courses.

COACHING/VOLUNTEERING/MENTORING

Career coach/mentor

Danish Society of Engineers (IDA) • April 2020 – Present