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ABOUT ME

I am an experienced software developer with over 15 years of expertise in embedded systems, as well as mobile and desktop applications. I have taken on key roles in R&D organizations, contributing from initial proof-of-concept phases through to production, deployment, and ongoing maintenance.

In embedded development, I have worked across multiple projects, handling everything from schematics review and smoke testing to SDK integration, CI/CD pipelines, and algorithm design. My experience spans various CPU/MCU vendors and development environments, where I have utilized tools such as oscilloscopes and logic analyzers. I have worked with both bare metal and RTOS environments, and my technical skills include C/C++, Python, Robot Framework, and Jenkins.

For mobile and desktop development, my focus has been primarily on the Qt framework, using both Python and C++. I also have brief experience in JavaScript for web development.

With a strong focus on software development, I have a proven track record in both academic and professional projects. Additionally, I have held technical leadership roles, where I defined use cases, established product requirements, and led teams to deliver high-quality solutions.

EXPERIENCE

Software Technology Manager, Aito Interactive Oy(Espoo) — November 2023 - May 2024

As Software Technology Manager, I was responsible for Aito's technology, primarily focusing on the software-driven functions of the devices. I developed innovative solutions from early concepts and prototypes, exploring options while documenting original needs, functionalities, solutions, and limitations.

I regularly interacted with stakeholders, usability experts, and designers, both within Aito and externally, to ensure seamless collaboration and alignment with project goals.

I contributed to the drafting of several patents that became the cornerstone of Aito's technology, some of which involved the integration

of pre-built neural network models and the dynamic reconfiguration of devices.

The position was very hands-on, involving development and debugging across a complex workflow. This included using oscilloscopes and schematic viewers, working with MCU code in C/C++ (bare-metal), desktop software development with C++ (inference), and Python (training), with extensive use of the Qt6 framework. My work also incorporated neural networks, leveraging tools such as OpenCV, YOLO-NAS, and OpenVINO.

Although I greatly enjoyed the role, it was made redundant during a major restructuring in April 2024. Due to Aito's critical financial situation, the majority of employees, including myself, were laid off.

Head of Software Development, Aito Interactive Oy(Espoo) — November 2021 - November 2023

Primarily focused on team leadership, mentoring, and facilitation, I led a team that grew from 6 to 10 members through direct hiring. Approximately 70% of my time was dedicated to meetings and management, while 30% was spent on hands-on coding and code review.

My responsibilities as a manager included:

- Representing the team in various projects, proposing solutions and plans with realistic estimates for the development and release of updates, both with customers and ODMs, as well as during Aito's internal sync meetings.

- Acting as line manager by arranging individual meetings to identify areas for technical and soft-skills development, structuring the holiday calendar to ensure continuity of maintenance, and sourcing talent on LinkedIn and through headhunters.

- Conducting weekly meetings in a pseudo-Scrum format for planning new software features using Jira and Confluence.

- Interacting with electronics component providers, such as STMicroelectronics, to select appropriate MCUs and resolve technical challenges related to their processors.

- Writing use case scenarios, identifying project needs, and breaking them down into requirements and specifications for the software team.

- Managing release notes and overseeing the release processes, assessing the maturity and quality of solutions before they were delivered to customers.

- Holding daily meetings with my team to ensure progress and alignment.

In my role as an R&D engineer and software developer, I was responsible for:

- Designing APIs in C/C++ as references for developers.

- Developing supporting and testing tools using Python and the Qt6 framework.

- Creating and maintaining a device configuration tool based on JavaScript and the WebHID API.

- Innovating new concepts and contributing to inventions by collecting ideas from various developers and proposing the patenting process when needed.

- Performing code reviews and administering GIT repositories.

For the last six months, I also managed a testing team of 7 members (both manual and automated testers) on a temporary basis until a new manager was hired. Those were indeed extremely busy times!

During this management period, I advanced the concepts of test automation with CI/CD integration, which included the use of Jenkins, Robot Framework, and HID/PTP protocol sniffing.

The position was very hands-on, involving development and debugging across a complex workflow. This included using oscilloscopes and schematic viewers, working with MCU code in C/C++ (bare-metal), and developing desktop software with Python, utilizing the Qt6 framework extensively.

My role was taken over by a colleague when I transitioned to the position of Software Technology Manager within Aito.

IoT Device Software Development Specialist, Kone Industrial Oy(Hyvinkää) — January 2020 - November 2021
Kone Services and Solutions R&D Hyvinkää, Finland

Kone 24/7 Connected Services

Concepts development for IoT devices that use inertial sensors in combination with wireless networks.

Firmware development with C, C++

IoT devices based on Wirepass stack (MQTT)

Algorithms development with Python and Matlab

Test automation based on RobotFramework + Python

I voluntarily resigned from this role to join once again Aito, this time I was offered a key responsibility role during a period of growth sustained by new investments and solid projects.

R&D Engineer, Embedded Software, Aito Interactive Oy(Espoo) — July 2016 - December 2019

I was actively involved in the technological development of Aito's solution. I was responsible for the functional realization of Aito's products by designing, implementing, and verifying the embedded software/firmware.

My main responsibilities included:

- Firmware architecture (UML, C programming, Doxygen)

- Hardware abstraction layer (ARM Cortex M0+ & M4, peripherals)

- Automation of R&D testing (Python, Matlab/Octave/Scilab)

- Audio measurements and audio optimization (Matlab & ISO loudness models)

- Collecting functional and performance requirements (Inflectra Spirateam)

- Source code repository management (GIT, Mercurial)

- Providing Arduino examples and technical support for product integration

I voluntarily resigning from this position, moving forward with the job offered by Kone Industrial. A financially solid organization while my family was growing in number.

Junior Design Engineer, Convergens Oy(Espoo) — February 2015 - June 2016

Considering the company's size and line of business, I was involved in a broad range of tasks, including analysis, development, testing, and production for various products. My goal was to collaborate with the team to meet functionality, efficiency, and reliability requirements, starting from "bare metal."

In different phases, I was responsible for:

Designing and implementing software units on RTOS or main loops under ARM7 and ARM-M3 platforms, coding in C/C++, and debugging via JTAG.

Integrating third-party embedded protocol stacks such as Ethernet and USB Host.

Defining, implementing, and testing software unit tests on Linux using shell scripts and Python.

Conducting design reviews and documenting the audio chain from a system-level perspective (software control over hardware).

Defining methods for testing audio chains and speaker production.

Setting up tests for speaker response and distortion (THD), acquiring and processing signals in Matlab/Octave, with calibration and verification.

Analyzing speaker response and harmonic distortion (THD) statistically using Matlab/Octave.

Providing remote installation support and tuning audio tests on remote production testers via SSH.

Developing and testing software for system verification and production testing using Python and shell scripts.

Reporting development status and progress to product management via Excel.

Other tasks included:

Using oscilloscopes and protocol analyzers (GUI and API).

Understanding electrical schematics and datasheets.

Soldering simple cables and PCB components.

I participated in the software development and testing of technologies such as CAN, I2C, SPI, ADC, USB, Touch, LTE modems, I2S, audio codecs, Ethernet, GUIs, and various ad hoc circuits for power supply.

I voluntarily resigned from this position to accept a job offer from Aito Interactive.

Intern - Electronics and Firmware engineer, Siel S.r.l.(Torino) — June 2011 - July 2012

I was hired for this position immediately after completing my BSc thesis, which served as a spinoff project for the company. As a junior engineer, I coded firmware for ARM Cortex M3 microcontrollers under the mentorship of two senior engineers. My work heavily relied on JTAG emulation using the Keil uVision suite.

I contributed to two different projects, starting from the definition of requirements and continuing through to the prototype stage. I frequently worked in the workshop alongside the manufacturing expert, where I applied hands-on skills to shape the prototypes into feasible designs for mass production.

I voluntarily resigned from this position to start my studies in Finland.

EDUCATION

Tampere University of Technology (1965-2018) — Master of Science (MSc) in Information Technology - Positioning and Navigation Systems 2012 - 2014

Background: object-oriented programming (C++), architecture of the DSPs and processors, signal processing and machine learning.

Major: navigation technologies and applications, including satellite-based systems (GPS, Galileo, etc.) and non-satellite techniques such as inertial navigation. Strong focus on sensor fusion (Kalman filter).

Politecnico di Torino — Bachelor of Science (BSc) in Information Technology - Mechatronics Engineering 2008 - 2011

Background: Mathematics, Calculus, Fourier transforms, Physics, Chemistry.

Major: IT networks, object-oriented programming (C/C++), automatic controls (PID), sensors and actuators.

LANGUAGES

Italian - Mother tongue

English - Professional proficiency

Suomi - Basic proficiency