

HAMID ABBASZADEH

Software Engineer | C++ | Robotics | Cloud Technologies

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PROFESSIONAL SUMMARY

Senior Software Engineer with 10+ years of experience designing, developing, and maintaining high-performance software across robotics, banking, payment systems, embedded systems, and cloud-based automation. Strong expertise in modern C++ (C++11/14/17/20), software architecture, multithreading, networking, and Linux-based systems. Experienced in translating business requirements into scalable, secure, and maintainable software solutions. AWS Certified Associate with hands-on experience in Google Cloud Platform and Google Apps Script, developing cloud-based automation solutions and Google Workspace integrations to improve business processes and operational efficiency.

CORE SKILLS

Languages & Standards: C, C++11/14/17/20, Qt, STL (incl. custom container design)

Software Design: Object-Oriented Design, Data Structures & Algorithms, Software Architecture

Concurrency & Networking: Multithreading, Multiprocessing, Asynchronous TCP/IP Socket Programming, MQTT

Platforms & Tools: ROS (Robot Operating System), Docker, GitLab CI, Unix/Linux, Embedded Linux (ARM9/ARM11, Cortex-A8/A9)

Embedded & Protocols: STM32/LPC Microcontrollers, CAN, Ethernet, RS485, RS232, I2C, SPI

Financial Standards: ISO 8583, ISO 9564, ISO 9807, ISO 7811

Other: Cybersecurity best practices, Hardware-in-the-Loop (HIL) testing, MATLAB, Altium Designer

PROFESSIONAL EXPERIENCE

Senior C++ Developer | ZOI GmbH | Stuttgart, Germany

2022 – Present

- Worked as a consultant embedded in the Robotics Department at Kärcher, maintaining and developing C++ code within a Dockerized, Unix-based platform.
- Translated business requirements into efficient, scalable software solutions while ensuring high code quality and performance.
- Leveraged C++ with MQTT and the Robot Operating System (ROS) to enhance robotic communication and functionality.
- Reviewed and improved software architecture, and collaborated with cross-functional teams to ensure system reliability.
- Streamlined the development workflow using Docker and GitLab CI, and applied cybersecurity best practices throughout the development lifecycle.
- Conducted hardware-in-the-loop (HIL) testing to verify system behavior under real-world conditions.

Senior C++ Developer | Informatics Services Corporation (ISC) | Tehran, Iran

Jan 2021 – Jul 2022

- Developed a modular banking platform for the Central Bank of Iran using Unix System V IPC mechanisms, including message queues, semaphores, and shared memory.
- Maintained and optimized performance-critical C/C++ code, applying advanced thread synchronization, multithreading, multiprocessing, and concurrency techniques.
- Implemented asynchronous TCP/IP socket programming to support reliable, high-throughput banking communications.

C++ Developer | Navaco Information Technology Co. | Tehran, Iran

Apr 2016 – Jan 2021

- Developed, tested, and supported C/C++ applications and tools for processing financial transactions in payment-terminal environments.
- Reduced support costs by 10% by delivering hundreds of enhancements to existing payment-terminal applications, including troubleshooting, root-cause analysis, and bug fixing, while cutting the codebase by 25%.
- Increased e-commerce revenue by 3% by fine-tuning three applications used in merchant order fulfillment.
- Built a PC-POS interface application leveraging Unix network programming to connect PCs and payment terminals.
- Implemented international financial transaction standards, including ISO 8583, ISO 9564, ISO 9807, and ISO 7811.

Embedded Software Expert | Farayand Argham Pardaz Company | Tehran, Iran

Jul 2015 – Apr 2016

- Developed firmware for Smart Marker Locator devices using STM32 ARM and LPC microcontrollers.
- Implemented communication protocols including Ethernet, TCP/IP, CAN, RS485, RS232, I2C, and SPI.
- Simulated and validated a practical Fast Fourier Transform (FFT) algorithm in MATLAB for deployment on microcontrollers.
- Designed schematic diagrams and PCB layouts using Altium Designer 10.

Junior Embedded Software Expert | Tarahan Control Shargh Ltd. | Mashhad, Iran

Jan 2010 – Jul 2015

- Developed firmware for AVL (GPS tracker) devices for the transportation industry, using the Qt C++ framework.
- Implemented communication protocols including RS485, RS232, I2C, and SPI, and designed supporting electronic circuits.
- Worked with embedded Linux on ARM-based development boards (ARM9, ARM11, Cortex-A8, Cortex-A9).

EDUCATION

Bachelor's Degree, Electronics Engineering

Sep 2007 – Sep 2009

Khavaran Institute of Higher Education, Mashhad, Iran

Associate's Degree, Electronics Engineering

Sep 2004 – Feb 2007

Montazeri Technical College of Mashhad, Mashhad, Iran