Milan Rusek

Senior C/C++ Developer | Embedded & Backend Systems | AI-Assisted Development

Prague, Czech Republic · milan@rusek.cz · +420 603 505 208

Professional profile

Senior C/C++ developer and independent contractor with experience developing software across embedded Linux, backend services, industrial communication, telecommunications, and payment systems. Work spans embedded software and testing for Nokia BTS infrastructure, industrial communication at Rockwell Automation, Linux thin-client development on Raspberry Pi, and applications for Verifone, Ingenico, and PAX payment terminals. Combines hands-on development with investigation of complex failures, maintenance of long-lived codebases, and integration of software with platform-specific functionality.

Experienced in setting up builds, developing component and integration tests, and supporting packaging and CI/CD workflows. Has led a small development team while remaining involved in implementation and technical problem solving.

AI-assisted development: Uses AI tools as part of the development workflow across embedded and backend projects, supporting code analysis and implementation. Interested in applying AI to development automation, workflow optimization, and automated testing.

Core expertise

Embedded development: C/C++ development for embedded Linux, industrial communication, and payment terminals. Experience with embedded build configuration, framework porting, and integration of platform-specific functionality and peripherals.

Backend engineering: Development of multithreaded and multiprocess backend services, including mail servers, flight booking systems, and communication middleware. Experience with C++20 coroutines, Apache modules, and C/C++ bindings for PHP and Python.

Development setup & automation: GNU Make, CMake, Yocto/BitBake, Debian packaging, and CI/CD support; Python/shell scripting and automated component and integration tests, including TDD with Google Test and Google Mock.

Diagnostics & reliability: Investigation of anomalies and customer-escalated issues in established C/C++ codebases. Work includes debugging, crash analysis, deadlock resolution, and implementing fixes across embedded, server, and cross-platform applications.

Industrial security testing: Python-based functional security tests covering fuzzing and penetration-testing scenarios; participation in an established vulnerability handling process at Rockwell Automation.

AI-assisted development: Practical use of AI tools for code analysis and development across projects. Further focus on AI-assisted workflow optimization and opportunities to automate development and testing.

Professional experience

Independent C/C++ Developer & Contractor

2017 – present

Project-based development across industrial automation, telecommunications, payments, cybersecurity, and travel technology. Engagements combine implementation, integration, testing, and maintenance of existing products. Work is delivered for end clients through agency engagements, including fixed-term contracts, repeat collaborations, and longer-term partnerships.

Embedded systems & industrial applications

Rockwell Automation s.r.o. — Developed embedded software in C for the EtherNet/IP Device Level Toolkit used in industrial communication. Main responsibilities included diagnostics, investigation of anomalies in the existing codebase, and implementation of corrective fixes. Work also included Python-based functional security tests covering fuzzing and penetration-testing scenarios, carried out within the established vulnerability handling process.

Nexineo — Develops a C++/Qt Linux thin-client application for Raspberry Pi with RDP connectivity, VPN configuration, licensing, USB peripheral management, and remote updates. Integrates FreeRDP/NexiRDP, Wayland kiosk configuration, multi-monitor support, and VAAPI/V4L2 hardware acceleration. Handles OpenVPN and systemd integration, TCP/UDP networking, Debian packaging, CMake, and CI/CD support.

Nokia — Worked on C++17 software and testing for base transceiver stations (BTS) in radio transmission infrastructure. Developed mocks and test stubs for BTS software, together with component and integration tests. Work also included Yocto Project and BitBake configuration for embedded Linux builds, combining embedded development with testability and build setup.

Aevi CZ s.r.o. — Developed payment and embedded applications for Verifone and Ingenico terminals and Linux using C++98 through C++17. Worked with EMV contact and contactless payments and PCI DSS requirements, including integration with point-of-sale systems through X.Pay middleware.

SobIT Defence & Technology s.r.o. — Developed a C++ payment application for PAX terminals using JUCE, adapting the framework to support terminal hardware and platform-specific functionality. Responsibilities included preparation of test scenarios, EMV certification work for Visa and Mastercard, and PCI DSS compliance work. Also works with PCI PIN requirements as part of the payment application project.

Backend services & integration

Unicorn Systems a.s. — Develops backend applications in C++. Current work also includes assessment and analysis of a large-scale system for a major client, together with preparation of a proposal for migration from Informix to Oracle. The engagement combines backend development experience with technical analysis and migration planning.

ESET s.r.o. — Developed ICAP-related functionality in the server-side ESET antivirus solution using C++. Work included implementing features and correcting issues in the existing server codebase.

Clearstream – Deutsche Börse Group — Developed and supported ServiceBroker using C++ and YAMI communication middleware. Responsibilities included implementation, application support, and deployment.

Economia a.s. — Developed mail server backend functionality in C, together with PHP bindings implemented in C++ and Apache modules. Work connected native server components with application-level interfaces.

Kiwi.com s.r.o. — Developed backend functionality for flight booking in a Linux environment using C++20. Work included coroutine-based code within the booking backend.

C.E.E. Group Travelport a.s. — Flight booking backend development, cloud and Lambda functions, and multithreaded and multiprocess server applications in C++14; agile development using Git and GitLab.

xyndata s.r.o. — Implemented SIP/VoIP support for video conferencing using Janus and configured FreeSWITCH. Developed a C++ wrapper for the WebRTC library as part of communication-library integration.

Cross-platform & POS applications

W.A.G. payment solutions a.s. — C++ development of the Sygic Truck navigation app across iOS, Android, Windows, and Linux; issue investigation and bug fixing.

NCR — Development of an iOS POS cashier application and its GUI in C++ and Objective-C++ using Xcode; analysis of customer-escalated issues and bugs.

Technologies

Languages: C, C++ (up to C++20), Objective-C++, Python, PHP, JavaScript, Google Script, shell scripting.

Libraries & integration: STL, Boost, Qt, JUCE and framework customizations, FreeRDP/NexiRDP, YAMI, SIP/VoIP, WebRTC, Janus, FreeSWITCH; GUI event-driven development.

Payments & security: EMV and contactless payments, PCI DSS and PCI PIN requirements, POS integration, X.Pay, Racal PCSM/HSM cryptographic systems.

Databases: MySQL, SQLite, Informix, Oracle, Oracle TimesTen, Sybase DB (SAP).

Tools: Git, GitHub, GitLab, Bitbucket, Jira, Confluence, Nagios, GNU Make, CMake, Xcode.

Linux system integration: Wayland and kiosk configuration, VAAPI/V4L2 hardware acceleration, OpenVPN integration, systemd service management.

Platforms: Linux, Raspberry Pi, macOS, Windows, iOS, Android, Verix OS, Prolin OS; experience with Solaris and HP-UX.

Earlier experience

Mayor | City of Zbiroh
2014 – 2017

Senior Developer / Development Lead | Monitoring RC System s.r.o.
2012 – 2014
Led development of GPS monitoring applications in C++, Python, and PHP, including system administration and security maintenance.

Senior Developer / EFT Development Team Leader | Wincor Nixdorf s.r.o.
2010 – 2012
Led a small development team building cross-platform EFT applications for payment terminals.
Developed C++ applications for Česká spořitelna on the Hypercom platform.

Senior Developer | Kerio Technologies s.r.o.
2008 – 2010
Developed Kerio MailServer core features in C++, including resource planning, domain renaming, and a global address list.
Worked on thread pools, deadlock resolution, crash investigation, and bug fixing.

C/C++ Developer | T-Mobile Czech Republic a.s.
2006 – 2007 · Rating, Billing and Payment unit
Developed applications in C/C++ and Slang on SunOS Solaris.
Adapted existing applications from Comptel EventLink v4.0 to v5.0; worked with Oracle TimesTen and troubleshooting.

C/C++ Developer | CCS – Czech Payment Card Company a.s.
2001 – 2006
Developed authorization centre software in C/C++ on HP-UX, network applications, and intranet services.
Worked with PHP, MySQL, Oracle, Informix, and Racal PCSM/HSM cryptographic systems.

PHP Developer | INT Plus s.r.o.
2000 – 2001
Developed web portals using PHP, C++, and shell scripts; configured Apache and Red Hat Linux.

Developer | VEMA – Computers and Design s.r.o. (Brno)
1998 – 2000
Developed the object-oriented G2 information system using Visual Basic, OLE/COM, and VBA in MS Office.

Junior Developer / Analyst | PVT a.s. (Šumperk branch)
1995 – 1998
Designed information systems using LBMS Systems Engineer CASE tools and developed software in MS Visual C++.

Education

Technical University in Brno
1994 – 1999
Master’s degree in Informatics and Computing · Faculty of Electrical Engineering and Informatics

SPS Sumperk
1989 – 1994
Electric traction in transportation

Professional training

2022: Uncle Bob’s TDD and Clean Code training (Nokia).
2022: Yocto Project and embedded development training (Nokia).
2022: GSM, GPRS, LTE, and 5G radio training (Nokia).
2019: ExtJS Sencha Framework Essential training.
2006: Comptel EventLink Mediation platform, Prague (T-Mobile).

Languages

English: B2 (Upper-intermediate).

Interests

C/C++ development on Linux and macOS, IoT projects with Arduino and Raspberry Pi, swimming, and cycling.
Last updated: September 16, 2026.