

Dmytro K.

Senior Senior C/C++ Embedded Engineer

SUMMARY

- Engineer with 18+ years in embedded and application development, specializing in C/C++ for RTOS, bare-metal, and Linux systems.
- Experience in low-level hardware interfacing and protocols (UART, I2C, SPI, CAN), optimizing for resource-constrained environments.
- Hands-on with STM32, Nordic nRF52, ARM SBCs, and tools like STM32CubeIDE, Visual Studio, and GNU toolchains.
- Experience across full SDLC including design, development, testing, and maintenance.
- Delivered projects in healthcare, IoT, smart devices, and multimedia using OpenCV, CUDA, Qt, Yocto, and security solutions.

TECHNICAL SKILLS

Main Technical Skills	C++, Python
Programming Languages	C, C++, Java, JavaScript, Objective-C, Python
Mobile Frameworks and Libraries	BLE
Java Libraries and Tools	Hudson, JSON, okHttp
PHP Frameworks	LAMP
C++ Frameworks	MFC
AI & Machine Learning	OpenAI, OpenCV, TensorFlow
JavaScript Libraries and Tools	React Router
Python Libraries and Tools	TensorFlow
.NET Platform	WPF
Data Analysis and Visualization Technologies	Looker Studio
Databases & Management Systems / ORM	Microsoft SQL Server, MySQL, Oracle Database, PostgreSQL, SQL, SQLite
UI Frameworks, Libraries, and Browsers	Ant Design, Chromium, UI
Cloud Platforms, Services & Computing	ARM (Azure Resource Manager)

Amazon Web Services	AWS API Gateway
Azure Cloud Services	Azure MSSQL
Google Cloud Platform	GCE
Industry Domain Experience	Image processing
QA, Test Automation, Security	AES, Cypress, gtest, JUnit, Unit Testing
Platforms	Android, CUDA, FreeRTOS, IOT, Nvidia, Raspberry PI, STM32, U-Boot, VxWorks, Yocto, Zephyr RTOS
SDK / API and Integrations	AWS API Gateway, CoAP, DirectX, IOS SDK
Hardware	CAD, CAN, CMSIS, Cortex-M cores(M0, M3, M4, M7), HAL, I2C, JTAG, MS, NFC, nRF52, PHY, QSPI, Sierra, SPI, UART, WiFi, ZigBee, ZWave
Web/App Servers, Middleware	COM, DirectShow, LWIP, OpenGL, POCO, Qml, TouchGFX, VLC, VLCLib, WinApi
Mail / Network Protocols / Data transfer	cURL, GPS, GSM, IPv6, OpenSSL, TCP/IP, USB
Third Party Tools / IDEs / SDK / Services	Eclipse, GCC, GDB, IOS SDK, KDevelop, Microsoft Visual Studio Code, Qt Creator, Qt Framework, Visual Studio, XCode
Codecs & Media Containers	Ffmpeg, ImageMagick
Version Control	Git, SVN
Operating Systems	GNU, HP-UX, iOS, Linux, Linux Kernel, macOS, RTOS, tvOS, Unix, Windows
Deployment, CI/CD & Administration	IAR, Ivy, Keil, QtCreator, STM32CubeMX
Message/Queue/Task Brokers	MQQT, ZeroMQ
Blockchain and Decentralized Software	OpenZeppelin, Radhat
File Systems, Storage	Protobuf, XML
Virtualization, Containers and Orchestration	Qemu
Collaboration, Task & Issue Tracking	Rally
Methodologies, Paradigms and Patterns	SDLC, SOLID
UI/UX/Wireframing	UI/UX

WORK EXPERIENCE

Senior Software/Firmware Engineer, Plugable extension boards development

Duration: August 2023 - present

Summary: Development of extension boards including bootloader with DFU support and cryptographic protection, device drivers, and signal processing connectivity for hardware extensions.

Responsibilities:

- Development of bootloader with DFU support and cryptographic protection.
- Device drivers development.
- Porting and extending libraries.
- Signal processing connectivity.

Technologies: STM32CubeIDE, stm32, UART, I2C, SPI, Thread/CoAP, AES, LwIP, HAL.

Senior Software Engineer, Surgical microscope for spinal surgery

Duration: September 2021 - August 2023

Summary: Development of software for a surgical microscope used in spinal surgery, focusing on image and video processing to assist surgeons during operations.

Responsibilities:

- Research, analysis and design.
- Coding and unit testing.

Technologies: Linux, OpenCV, Nvidia CUDA, tcp/ip, Magwell video capture SDK, video processing, image processing, interprocess communication.

Senior Software/Firmware Engineer, Smart watch health care project

Duration: April 2020 - September 2021

Summary: Development of Windows subsystem, BLE connectivity, OTA updates, drivers implementation, business logic, and fitness algorithms for a smart watch health care device.

Responsibilities:

- Research, analysis and design.
- Coding and unit testing.

Technologies: STM32CubeIDE, stm32, nRF52, FreeRTOS, TouchGFX, UART, I2C, SPI.

Senior Software Engineer, Video conference software

Duration: March 2020 - April 2020

Summary: Integration of new Chromium engine and bug fixing for video conference software to enhance performance and user experience.

Responsibilities:

- Research, analysis and design.
- Coding and unit testing.

Technologies: C/C++, Video/Audio codec, Chromium Embedded, Windows, Mac.

Senior Software/Firmware Engineer, Vehicle Control System project

Duration: October 2019 - March 2020

Summary: Implementation of vehicle control system including navigation, video encoding, engine control, and telemetry to improve vehicle management and monitoring.

Responsibilities:

- Research, analysis and design.
- Coding and unit testing.

Technologies: C/C++, gnu chain, Qt Creator, CAN bus, Raspberry Pi.

Senior Software/Firmware Engineer, Mobile healthcare device project

Duration: March 2019 - October 2019

Summary: Development of desktop applications for setting up and testing mobile healthcare devices to ensure device functionality and reliability.

Responsibilities:

- Research, analysis and design.
- Coding and unit testing.

Technologies: C/C++, QT, Sierra Wireless Open AT, networking, serial port interface, gps, gsm.

Senior Software/Firmware Engineer, Smart house gateway

Duration: August 2018 - March 2019

Summary: Firmware implementation for a smart house gateway based on Z-Wave network to enable home automation and device connectivity.

Responsibilities:

- Research, analysis and design.
- Coding and unit testing.

Technologies: C/C++, Boost, Linux, Yocto, Z-Wave, networking, JSON, gcc, gdb.

Senior Software/Firmware Engineer, Smart NIC

Duration: October 2017 - August 2018

Summary: Firmware development for smart network interface devices to enhance network performance and device management.

Responsibilities:

- Research, analysis and design.



- Coding and unit testing.

Technologies: C/C++, Linux, networking, u-boot, Octeon sdk, device drivers, gcc, gd.

Senior Software/Firmware Engineer, IOT gateway

Duration: April 2016 - October 2017

Summary: Development of IoT gateway and mobile pedestal to support IoT device connectivity and communication.

Responsibilities:

- Research, analysis and design.
- Coding and unit testing.

Technologies: C++, Yocto linux, Thread networking, MQTT, TUN/TAP, ipv6, 6LoWPAN, NFC, IAR, Kinetis sdk.

Senior Software Engineer, Album design software

Duration: June 2015 - April 2016

Summary: Development of album design software for professional wedding and portrait photographers to create customized photo albums.

Responsibilities:

- Research, analysis and design.
- Coding and unit testing.

Technologies: C++, QT5, qml, imagemagick, gtest, http/https.

Senior Software Engineer, Home media centre

Duration: June 2015 - June 2015

Summary: Development of DLNA/UPNP home media centre software for iOS, tvOS, Android, and Linux platforms to enable media streaming and sharing.

Responsibilities:

- Research, analysis and design.
- Coding and unit testing.

Technologies: C++, Objective-C, boost, iOS SDK, tvOS, xcode, mobile VLC kit.

Senior Software Engineer, Client for cloud services

Duration: March 2014 - June 2015

Summary: Development of client software for cloud services including download, upload, update, and cryptographic protection of user files stored in the cloud.

Responsibilities:

- Research, analysis and design.
- Coding and unit testing.

Technologies: C++, QT5, POCO, OpenSSL, curl, cryptopp, ZeroMQ, SQLite, http/https.



Senior Software Engineer, Presentation software

Duration: May 2012 - March 2014

Summary: Development of software for mixed type presentations including video, DVD, webcam, rich text, images with alpha blending and transitions.

Responsibilities:

- Research, analysis and design.
- Coding and unit testing.

Technologies: C++, DX9, DX11, DirectShow, Media Foundation, OpenGL, MFC, VisualStudio12, Metro(Modern UI), ffmpeg.

Software Engineer, Sqlite DB performance test on iOS devices

Duration: August 2011 - September 2011

Summary: Performance testing of SQLite database on iOS devices to evaluate and optimize database operations.

Responsibilities:

- Research, analysis and design.
- Coding and unit testing.

Technologies: Objective C, iOS sdk, XCode, SQLite.

Software Engineer, Back-end server project

Duration: May 2011 - May 2012

Summary: Development of smart router configuration support backend server to manage router settings and operations.

Responsibilities:

- Research, analysis and design.
- Coding and unit testing.

Technologies: C++, Xml, Eclipse, RadHat linux, qemu, Rally.

Software Engineer, 3D CAD system

Duration: April 2010 - May 2011

Summary: Development of alpha version of 3D CAD system for computer-aided design and modeling.

Responsibilities:

- Research, analysis and design.
- Coding and unit testing.

Technologies: C++, OpenGL, Qt, Xml, Bezier curves, step files, Windows, MS Visual Studio, Rally.



Software Engineer, Application for business

Duration: September 2009 - April 2010

Summary: Maintenance development, build script improvements, and unit test implementation for business application software.

Responsibilities:

- Research, analysis and design.
- Coding and unit testing.

Technologies: Hudson, git, svn, C++, Java, JUnit, Ant, Ivy, HP-UX, Eclipse, Oracle, MSSQL, Visual Studio, COM, MFC, WINAPI.

Software Engineer, Mobile toolkit box software

Duration: March 2008 - September 2009

Summary: Development of software for mobile toolkit boxes including design, development, and testing of new functionality.

Responsibilities:

- Research, analysis and design.
- Coding and unit testing.

Technologies: Security Cards, C++, DES/3DES, Java, Eclipse, Visual Studio NET, MFC, WINAPI.

Software Engineer, Distributed document processing application

Duration: May 2007 - March 2008

Summary: Development and maintenance of distributed document processing application with new feature additions.

Responsibilities:

- Research, analysis and design.
- Coding and unit testing.

Technologies: C++, Oracle, MSSQL, Visual Studio, Data-matrix, Barcodes, MFC, WINAPI.

Software Engineer, Firmware for telecommunication device

Duration: October 2006 - May 2007

Summary: Development of firmware for telecommunications devices including DS1, DS3, and Ethernet (PHY) device drivers.

Responsibilities:

- Research, analysis and design.
- Coding and unit testing.

Technologies: VxWorks, Eclipse, C/C++, SVN.



Software Engineer, Firmware for telecommunication device

Duration: July 2006 - October 2006

Summary: Development of application for telecommunications industry including alarm processing module and H264 video encoder parts.

Responsibilities:

- Research, analysis and design.
- Coding and unit testing.

Technologies: VxWorks, Eclipse, C/C++, SVN, Visual Studio NET, Multimedia, Multithreading.

Software Engineer, Distributed internet auction system

Duration: February 2005 - July 2005

Summary: Development of server part of a commercial distributed internet auction system to support online auction operations.

Responsibilities:

- Research, analysis and design.
- Coding and unit testing.

Technologies: Kdevelop, gcc, SourceSafe, Linux, PostgreSQL, Cryptography, Multithreading.

Software Engineer, Application for construction industry

Duration: September 2005 - February 2005

Summary: Development of application software for the construction industry to support business processes.

Responsibilities:

- Research, analysis and design.
- Coding and unit testing.

Technologies: Visual Studio, COM, MS SQL, Boost, Multithreading.

Software Engineer, Application for insurance business

Duration: June 2004 - September 2005

Summary: Development of application software for the insurance business to manage insurance processes.

Responsibilities:

- Research, analysis and design.
- Coding and unit testing.

Technologies: Java, xml, Eclipse, MKS, ant.

Software Engineer, Distributed Telemetry Processor

Duration: May 2002 - June 2004



Summary: Development of client/server intercommunication module for telemetry distributed system including graphic telemetry viewer and earth remote sensing software package.

Responsibilities:

- Graphic telemetry viewer development.
- Earth remote sensing software package development.
- Research, analysis and design.
- Coding and unit testing.

Technologies: C++, OpenGL, Com/DCom, Svn, Tcp/Ip, Visual Studio 6.0, MYSQL, Multithreading.

EDUCATION

- **Lviv National Polytechnic University**
M.Sc Degree in Microelectronics and solid state devices
August 1996 - May 2001

