

# DENIS VICTOROV

## SOLUTION ARCHITECT | LEAD DEVELOPER | PRODUCT MANAGER

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### SUMMARY

#### Summary

- 25+ years in development (architecture, firmware, schematics, PCB design, 3D Modeling)
- 15+ years in C/C++ development under various platforms and OS's (RTOS based, ARM, OpenWRT)
- 10+ years of work as Lead Software Engineer
- 7+ years in unix shell script writing, frontend and backend development (Linux, PyQt)
- 5+ years of work as Software Engineering Team Leader
- 5+ years of work as Solution Architect
- 5+ years of work as a Scrum Master
- 3+ years of work as a Project Manager
- English level: B1
- Driving license category B since 2003

#### Expertise

- Network protocol stack, DHCP, DNS, TCP/UDP sockets, Wi-Fi modules
- IoT cloud providers (AWS IoT Core, Azure IoT Hub)
- Security features: secure bootloaders, OTA updates, device authentication
- Algorithms and containers
- Linux internals
- Language platform dependencies
- Pico kernel real-time operating systems and multithreading
- Advanced schematics and PCB understanding skills
- AUTOSAR (Automotive)
- Hardware peripherals: ADC, DAC, UART, RS232(422,485), I2C, SPI, CAN, 1-Wire, etc

#### Leading & Management

- Leading team up to 15 members
- Reporting, planning, technical coordination
- Daily sync-up, weekly reports, estimation, task planning
- On-site coordination
- Presentation & customer communication
- Candidate interviewing

## Courses and certificates

- Python 3 tutorial course
- C Tutorial course
- C++ Tutorial course
- Mastering Programming with MATLAB

## SKILLS

### Academic Disciplines

- **Humanities:** Russian, Belarusian, Ukrainian
- **Natural Sciences:** Optics, Theoretical mechanics, Spectroscopy and spectral analysis, Heat and Mass Transfer
- **Formal Sciences:** Integer programming, Control in Robotics, Discrete programming
- **Applied Sciences:** LED, Asynchronous programming and multithreading, Resistor, Audio, video and audiovisual engineering, Inductor, Service Oriented Architecture (SOA), MVVM Architecture pattern, MVP Architecture pattern, Systems engineering, Software Architectural Styles, Antenna Design, Algorithms & Data structures, Engineering design, Relays, REST, Command Query Responsibility Segregation (CQRS), Electronic Components, Microservice Architecture Pattern, Fuzzy Logic, Clean Code, Fire alarm systems, Structured Logging, Operational Amplifier Design, Domain Specific Languages, DC-DC Converter Design, Electronics Engineering, Motors, Dependency injection, Transformer, Analog Signal Filter Design, Information Security, Microcontroller, Integrated Circuit, Fast Fourier Signal Processing, Reactive Programming, IOC, Electronic Design, MOSFET, Pair Programming, Radio Frequency Receiver Design, Capacitor, ISO 9126, Security Operation Design, Transistors, Fuse, Legacy Code, Functional Programming, Battery, Test-Driven Development, Radar Theory, Switches, Networks, Circuit Breakers

### Engineering Practices

- **Digital Engagement:** 3D Art, Optimization
- **Cloud:** Cloud Support Services
- **Management:** Delivery Management, Product Management
- **Advanced Technology:** Presale Support, Software Engineering Practices, Algorithms, STL, Gitflow, C Programming, Run-time behavior of C program, Assembler, Portability and security issues in C, System design and analysis, Continuous Integration, Memory management in C, C Libraries, Continuous Delivery, Core C
- **Quality Engineering:** Component / Integration Testing, Unit Testing

### Industries

- **Life Sciences & Healthcare:** X-ray Diagnostics
- **Technology, Media & Telecoms:** Electronics

### Leadership & Soft Skills

- **Communication:** Negotiations, Business Correspondence

## Managerial

- **Project Management:** Project Monitoring and Control, Project Management, Project Estimation and Schedule Development, Programme Management
- **General Management:** Quality Management, Metrics and Key Performance Indicators, Kanban, Evidence Based Management
- **Organizational Management:** Organizational Capability Development

## Technologies

- **Standard:** GSM, CAN, DNS, JSON-RPC, Ethernet, RS-485, TortoiseGit, I2C/SMBus, NFS, TCP, UDP, SCTP, Mercurial, FAT, FAT32, DHCP, VPN technologies, WiFi, SSH, I2S, Git, SMS, Berkeley Internet Name Domain, USB, MQTT, GPIO, PPTP
- **Framework:** Apache Hadoop, Matplotlib
- **Other:** Radiology Information System, RFID technologies, OpenWRT, Bare metal, Proximity cards, ASM, Azure SDKs, Cadance OrCAD, Collaborator, Alexa Voice Service, Azure IoT Hub Device Provisioning Service, Xilinx Products, Intel Quartus Prime, Eclipse Platform, Programmable logic, CAM350, Lattice
- **Hardware:** Cortex-A Processor, Bluetooth, Cortex, Microchip 8-bit MCU, ESP32, STM32 Nucleo Boards, Raspberry Pi, Microcontrollers, RS-232, STM8 Controllers, Microchip 16-bit MCU, STM32 Cortex-M family MCU, STM8 Discovery, AVR Processor, Media Entertainment Devices, ESP8266, MSP430, Arduino
- **Computer Language:** Bash, Borland Delphi, Assembler [x86], C#, C++, Pascal, AWK, Assembler [Microchip 8-bit MCU], C [Programming Language], Assembler [Atmel AVR], VHDL, Embedded Computer Languages, Assembler [Intel MCS51], Sed, Assembler [ARM core]
- **Solution:** Corel Draw, TortoiseSVN, Make [build automation tool], BitBucket, CMake, GNU Automake, Gitlab CI, Visual Studio Code, tcpdump, Autodesk AutoCAD, Confluence, Eclipse, SolidWorks, Sublime Text, Borland CBuilder, Trello, Microsoft Outlook, VMware Player, Jira, Version Control Systems, Visual Studio, MS PowerPoint, Gerrit, Adobe Photoshop, Qt Creator, Azure CLI, Buildroot, MathCad, GNU Autoconf, AWS IoT Core, Adobe Acrobat Professional, VIM, Perforce, Gitlab, drawio, Jenkins, PuTTY, Wireshark, GitHub, LibreOffice, Microsoft Excel, Microsoft Word, Control Systems Toolbox, Pro/Engineer
- **Platform:** MS Windows, Slack, RTOS, Hyper-V, MATLAB, Docker

## EDUCATION

**Name of the Education Establishment:** Belarusian State University of Informatics and Radioelectronics

**Faculty/College:** Radio Engineering and Electronics, Modelling And Computer Designed Of Radioelectronic Devises

**Degree (diploma):** Specialist (Bachelor)

**SPECIALTY:** Engineer of Radioelectronics

## WORK EXPERIENCE

**Mar-2024 - Till now**

Solution architect, Head of development, XR Lab LLC (X-Labs group)

**Project:** Development of various types of systems:

- AI robots - flying, car, machines, animals (snake, spider, dog).
- Robotic systems for helping the elderly.
- Medical devices for recording ECG, CTG, EEG, HRc, SpO2.
- Suits for virtual reality (VR) - EMS, MMS.
- Computer vision (CV).
- Navigation (visual, GPS, -gyro, -accel, -magneto, LiDAR, ToF, combined). Simultaneous Localization and Mapping (SLAM).

**Team Size:** 15 to 20 members in total, 3 teams

**Project Role:** Head of dev department | Solution architect | Tech Lead | Product manager

**Tasks performed:**

- Team management
- Product requirements collecting
- Software architecture design
- Software development
- Software code brushing
- Software code review
- Tasks estimating and planning
- Documentation writing

**Environment:** • GCC • C • Python • Go • PyQt • Docker • CMake • Eclipse • ctags • vi, vim • Git • Jira • Confluence • Bitbucket • GNU ARM • GNU Windows • GNU Linux • Python • shell scripts • json • xml • Linker files • Multithreading • Websockets • DHCP • DNS • SSL • SSH

**Mar-2023 - Oct-2023**

Lead software engineer, Head of development, Fenomen Games LLC

**Project:** Development of programs for server maintenance, performance optimization

**Team Size:** Dev.team 7 members

**Project Role:** Key developer | Head of dev department | Product manager

**Tasks performed:**

- Team management
- Product requirements collecting
- Software architecture design
- Software development
- Software code brushing
- Software code review
- Tasks estimating and planning
- Documentation writing

**Environment:** • GCC • C • Python • Go • PyQt • Docker • CMake • Eclipse • ctags • vi, vim • Git • Jira • Confluence • GNU ARM • GNU Windows • GNU Linux • Python • shell scripts • json • xml • Linker files • Multithreading • Websockets • DHCP • DNS • SSL • SSH

## Sep-2022 - Jan-2023

Lead software engineer, Head of embedded department, Rozum Robotics LLC

**Project:** Robotic arm with many degrees of freedom

**Team Size:** Dev.team 11 members, 3 teams

**Project Role:** Head of embedded department | Deputy CTO | Product manager | Key developer | Scrum master

### Tasks performed:

- Coordinating the work of departments
- Team management
- Product requirements collecting
- Software architecture design
- Hardware architecture design
- Software development
- Hardware development
- Software code brushing
- Software code review
- Tasks estimating and planning
- Documentation writing
- Debugging

**Environment:** • GCC • C / C++ : STL • OpenOCD • GDB • Docker • CMake • Matlab • Eclipse • ctags • vi, vim • Git • Jira • Confluence • Bitbucket • GNU ARM • GNU Windows • GNU Linux • Python • shell scripts • mqtt • json • CAN • Linker files • Multithreading • Websockets • DHCP • DNS • SSL • SSH

## Sep-2021 - Aug-2022

Lead software engineer, EPAM Systems, <http://www.epam.com>

**Customer:** VSilicon

**Project:** Maintenance and sustenance VSilicon Chipset TVs

**Team Size:** Dev.team 4 members

**Project Role:** Key developer

### Tasks performed:

- Project requirements collecting
- Negotiations with the customer
- Software architecture design
- Software development
- Software code brushing
- Software code review
- Tasks estimating and planning
- Documentation writing
- Debugging

**Environment:** MySQL, • GCC • C / C++ : STL • websockets • Docker • CMake • Eclipse • ctags • vi, vim • Perforce • Git • Jira • Confluence • Bitbucket, • GNU Windows • GNU Linux • C • C++ • Python • shell scripts • mqtt • json • Linker files • Multithreading • Websockets • DHCP • DNS • SSL • SSH

## Jul-2020 - Sep-2021

Lead software engineer, EPAM Systems, <http://www.epam.com>

**Customer:** Orange europe

**Project:** Software for network control enterprise solutions: • Secure DNS (DNS Firewall and Response Policy Zone); • Network services (DNS, DHCP, IPAM); • Hybrid cloud and virtualization (network automation for cloud); • Network automation. EPAM provides development, sustaining, and R&D services

**Team Size:** Dev.team 7 members

**Project Role:** Key developer

### Tasks performed:

- Project requirements collecting
- Negotiations with the customer
- Software architecture design
- Software development
- Software code brushing
- Software code review
- Tasks estimating and planning
- Documentation writing
- Debugging

**Environment:** MySQL, • GCC C / C++ : STL • websockets • Docker • CMake • Eclipse • ctags • vi, vim • Perforce • Git • Jira • Confluence • Bitbucket, • GNU Windows • GNU Linux, • C • C++ • Python • shell scripts • mqtt • json • Linker files • Multithreading • Websockets • DHCP • DNS • SSL • SSH

## Apr-2020 - Nov-2020

Senior software engineer, EPAM Systems, <http://www.epam.com>

**Customer:** Internal project

**Project:** Development of the Smart Locker solution including mechanical, hardware, software and services

**Team Size:** Dev. team: 12 members

**Project Role:** Key developer

### Tasks performed:

- Project requirements collecting
- Negotiations with the customer
- Software architecture design
- Software development
- Software code brushing
- Software code review
- Tasks estimating and planning
- Documentation writing
- Debugging

**Environment:** MySQL, • GCC C / C++ : STL, websockets • Docker • CMake • Eclipse • ctags • vi, vim • Git • Jira • Confluence • Bitbucket, • GNU Windows • GNU Linux • esp32 • freertos • Amazon AWS • C • C++ • Python • shell scripts • mqtt • json • Linker files • Multithreading • Websockets • DHCP • DNS • SSL • SSH • ADC • UART • SPI • I2C • Timers • PWM

## Feb-2019 - Apr-2020

Senior software engineer, EPAM Systems, <http://www.epam.com>

**Customer:** Keurig Dr Pepper

**Project:** Keurig's Connected Program Commercial Release Part of appliance connectivity squad Virtual brewer facility team

**Team Size:** Dev. team: 6 members

**Project Role:** Senior software developer | Scrum master | Solution architect

### Tasks performed:

- Project requirements collecting
- Negotiations with the customer
- Software architecture design
- Software development
- Software code brushing
- Software code review
- Tasks estimating and planning
- Documentation writing
- Debugging

**Environment:** N/A, • GCC C / C++ : STL, websockets • Python: Qt Creator, PyQt5, matplotlib, websockets • Microsoft visual studio .net C# • Eclipse • Git • Jira • Confluence • Bitbucket , • GNU Windows • GNU Linux • C, C++, C#, Python, shell scripts • Linker files • Multithreading • Websockets • DHCP • DNS • SSL • SSH

## Apr-2018 - Oct-2018

Lead firmware engineer, ASBIS, CJSC, <https://perenio.by/>

**Customer:** ASBIS, CJSC

**Project:** IoT devices firmware creating (NDA bans more) based on OpenWRT

**Team Size:** Firmware Dev Team: • Software C developer: 3 members • Software C++ developer: 4 members • Software Perl developer: 2 members • Software Python developer: 3 members Server Dev Team: 8 members (C, C++, Python, Perl)

**Project Role:** Lead firmware developer

### Tasks performed:

- Project requirements collecting
- Software architecture design
- Documentation writing
- Software development
- Technical coordinating of HW, SW and mobile team, manufacturer
- Prototypes testing, Debugging

**Environment:** N/A, • Buildroot • Cmake • GNU Linux • OpenWRT • Multithreading • Linker files • Git • Jira • Jenkins, • OpenWRT • RTOS • Multithreading • I2C • SPI • SDIO • DMA • gdb • gprof • DHCP • DNS

## Oct-2015 - Mar-2018

Project chief developer, Adani, CJSC, www.adani.by

**Customer:** Adani, CJSC

### Project:

- EPR (ESR) Spectrometer SPINSCAN X: <https://lab.adanisystems.com/solutions/solution-category/epr-esr-spectroscopy> - hardware design creating, embedded firmware development.
- GAMMA-RAY SPECTROMETER RUG 91-2: <https://lab.adanisystems.com/products/product-line/gamma-ray-spectroscopy> - hardware design creating, embedded firmware development

**Team Size:** Firmware developer: 1 member (me) • Electronics developer:2 members • Hardware developer: 3 members • Enclosure developer: 1 member • Dev team: 1 member (me)

**Project Role:** Lead firmware developer

### Tasks performed:

- Project requirements collecting
- Low level product architecture
- Low level schematics design
- components selecting
- components consistency verification
- Altium Designer project creating
- Software architecture design
- Documentation writing
- Software development
- Subordinate leading
- Subordinate code review
- Technical coordinating of 3D designer, HW, SW and mobile team, manufacturer
- Prototypes testing, Debugging

**Environment:** N/A, • IAR C for ARM • gcc (ARM Cortex-M4) • eclipse • JTAG • SVN, • RTOS • multithreading • I2C • SPI • SDIO • DMA • gdb • gprof • linker files

## Nov-2010 - Sep-2015

Firmware developer, Euroautomatica F&F JLLC, [www.fif.by](http://www.fif.by)

**Project:** Relay Automation Line - more than 20 devices created: • Astronomical time relays • Current relays • Voltage relays • Time relays • Pulse relay • Photo relay • Phase control relays • Electric motor protection relay • Power limiters • Multifunctional temperature regulators • Current indicators • Voltage indicators • Power indicators. Creating of industrial power management systems

**Team Size:** Firmware developer: 1 member (me) • Electronics developer: 4 members • Hardware developer: 2 members • Enclosure developer: 2 members • Dev team: 1 member (me)

**Project Role:** Firmware and hardware developer

### Tasks performed:

- Project requirements collecting
- Low level product architecture
- Low level schematics design
- Components selecting, consistency verification
- Altium Designer project creating
- Software architecture design
- Documentation writing
- Software development
- Code review
- Technical coordinating of 3D designer, HW and SW team, manufacturer
- Prototypes testing, Debugging

**Environment:** N/A, • IAR Embedded Workbench for Atmel AVR • Hi-Tech PICC • Microchip MPLAB IDE • Atmel AVR Studio • gcc (AVR) • eclipse • JTAG • SVN, • multithreading • I2C • SPI • SDIO • linker files

## Jun-2002 - Aug-2010

Firmware Engineer, Academy of Sciences of the Republic of Belarus, Institute of Mechanics and Machine Reliability.

**Customer:** Internal use and retail sales

**Project:** Dynamometric keys DMK - series, based on Hall sensor. Development, production and repair of electronic measuring instruments

**Team Size:** Firmware developer: 2 members • Electronics developer: 2 members • Hardware developer: 3 members • Enclosure developer: 1 member

**Project Role:** Firmware and hardware developer

### Tasks performed:

- Project requirements collecting
- Low level product architecture
- Low level schematics design
- Components selecting, consistency verification

- Altium Designer project creating
- Software architecture design
- Documentation writing
- Software development
- Prototypes testing, Debugging

**Environment:** N/A, • Hi-Tech PICC • Microchip MPLAB IDE • gcc • eclipse • JTAG, • I2C • SPI • SDIO • linker files

**Contacts:**

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