

Vsevolod Lobko

e-mail: seva@sevik.org

github: <https://github.com/sevikkk>

linkedin: <https://www.linkedin.com/in/sevikkk/>

About me

Over 20 years of experience in software development and related fields. Worked in both software development and DevOps teams. Engaged in intra- and inter-team communications, writing and reviewing specifications and requirements. Completed my own tasks and led others.

Hands-on experience with most current technologies, local development, cloud, and on-premises deployment. Continuously self-educate to stay relevant.

Able to work at any level of the IT stack, from electronics and networking to product management.

Work experience

Dec 2023 — Now **Principal Technical Problem Solver**

AirconAI (airconai.com)

- Designed and implemented AWS-based infrastructure for web services, databases, background service workers, and other required systems (AWS, CDK, PostgreSQL, SQS, ECS, AWS Lambda, AWS API Gateway).
- Developed CI/CD infrastructure for building, testing, and deployment using GitLab CI (GitLab, AWS, Docker, CDK).
- Configured and integrated self-hosted GitLab runners for significant cost savings (GitLab, Docker).
- Created software and infrastructure for handling user file uploads (TypeScript, CDK, AWS S3).
- Integrated with external logistics services like CargoWise and Pelicargo. Implemented background workers infrastructure and a queuing system (TypeScript, ECS, SQS).
- Designed and implemented an LLM-based data extraction pipeline for handling customer RFQs (OpenAI Assistants API, Structured Data Extraction, Python, TypeScript, ECS).
- Integrated the LLM pipeline with mail services for receiving and sending emails (TypeScript, IMAP, ECS, S3).
- Developed various tools used by the LLM AI agent to interact with back-office systems (TypeScript, OpenAI Assistants API).
- Onboarding and supporting developers on development processes and technology stack.
- Continuously manage day-to-day operations for production and development infrastructure.
- Perform ongoing development work for backend, frontend, and infrastructure tasks. (TypeScript, React, CDK)
- Making all kinds of technical decisions, reviewing proposals and code, troubleshooting

issues, and handling other tasks needed to keep progress going.

Nov 2016 — Nov 2023 **Principal Software Engineer**

DataRobot (datarobot.com)

- Improved real-time prediction infrastructure for production readiness (Python, Ansible, Terraform, AWS EC2, AWS EKS).
 - Enhanced on-premises application deployment automation (Python, Ansible, Docker, Kubernetes, Helm).
 - Improved application configuration management (Python, Bash, Kubernetes, Helm).
 - Enhanced application distribution mechanisms (Kubernetes, Helm, Docker).
 - Unified application runtime environment (Python, Docker, Bash).
 - Implemented reusable CI/CD pipelines and testing infrastructure for customer-specific integration projects using GitLab and EKS.
 - Wrote or reviewed technical specifications for most development projects.
 - Assisted in choosing technology and software components for various internal projects.
 - Performed assessments on architectural solutions.
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Aug 2014 — Oct 2016 **Python Developer and Architect**

AlertSite by SmartBear (smartbear.com)

- Reverse-engineered and rebuilt a legacy data collection system with live migration without data loss or service interruption (MySQL, RabbitMQ, Python/asyncio-based SSH client farm).
 - Migrated legacy infrastructure to Docker on AWS (Docker, Ansible, Python, AWS RDS, AWS CloudFormation).
 - Live-migrated numerous hand-configured remote hosts to a centralized configuration management system, unifying OS and networking configurations.
 - Implemented automated build and release processes.
 - Supported and refactored massive legacy codebase (Perl, Bash, MySQL).
 - Live-migrated large MySQL multi-host databases to Amazon RDS.
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April 2013 — July 2014 **Senior Python Developer**

Online services company (Employment details covered by NDA)

- Implemented a statistics and analytics system from design to production, including integration into the existing codebase with live migration of a high-load production system (PostgreSQL, MongoDB, Python).
 - Developed backend features for a web-based online services system (Python, Tornado, MongoDB, Redis).
 - Implemented a testing framework and initial test suite for critical legacy code (tornado.testing, nose, Selenium WebDriver).
 - Implemented automated database migrations and integrated them into the development process.
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April 2001 — March 2013 **CTO**

IPNET Internet Service Provider (www.ip.net.ua)

- Developed and implemented network architecture (Ethernet, TCP/IP, OSPF, MPLS, BGP).
- Developed and implemented software architecture (TCL, PHP, Python, Twisted, PostgreSQL, Memcached).
- Gathered requirements from internal customers.

- Built and managed development and operations teams.
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March 2000 — March 2001 **CTO**

IMT Telecommunication Company

- Designed and implemented hardware and software solutions for IVR services (C, TCL, XOTCL).
 - Designed and implemented a billing system (TCL, PostgreSQL, PHP).
 - Built development and operations teams.
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January 1997 — February 2000 **System Administrator, Developer**

Concern Alex ISP department (alex-ua.com)

- Designed and implemented a Radius AAA framework with real-time database lookups and multi-login detection (TCL, C, PostgreSQL).
 - Designed and implemented a billing system (TCL, PHP, PostgreSQL).
 - Provided Level 2/Level 3 user support.
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April 1995 — December 1996 **Software Developer**

State Property Fund of Ukraine (www.spfu.gov.ua)

- Developed a FoxPro data entry application (FoxPro, SQL).
 - Developed import scripts for Informix Database (Perl, SQL, SCO Unix).
 - Supported and administered mail and data collection systems (UUCP, Linux).
 - Provided user support.
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External projects

2013 — 2019 **Technical advisor**

Ecoisme GreenTech company (ecoisme.com)

- Assisted in decision-making for technology, hardware, and software areas.
 - Helped with hiring processes.
 - Participated in Go-to-Market strategy sessions.
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2000 — 2013 **Technical advisor and architecture lead**

ITCG Web and Advertising Agency (itcg.net.ua)

- Made decisions in technology and software areas.
 - Implemented core components of infrastructure (PHP, Python, Twisted, PostgreSQL, Memcached).
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Open-Source Work

I have contributions to multiple well known open-source projects:

- PostgreSQL (<https://www.postgresql.org/>)
Improved UTF-8 encoding handling for pl/tcl module
- FreeBSD (<https://www.freebsd.org/>)
Implemented additional modules for IP Firewall, Geom and NetGraph subsystems

- NetBSD (<https://www.netbsd.org/>)
Did initial port to ADM5120 SoC
- VMWare open-source tools (<https://github.com/vmware/open-vm-tools>)
Fixed some inconsistencies in mounted volumes handling
- Psycopg (<https://www.psycopg.org/>) - library for interfacing PostgreSQL from Python
Contributed to configuration and connection handling code

Hobby Projects

2008 WowWee Robopanda Reversing (<https://sevik.org/robopanda/>)

A cute toy with a cartridge-based content system, but only two English versions were made by WowWee. I aimed to create custom content.

- Implemented an FPGA-based SPI cartridge emulator with full execution tracing.
 - Used the emulator to reverse-engineer bytecode for the main engine and motion controller.
 - Implemented disassembler, emulator, and assembler for both engines.
 - Conducted emulator-to-trace comparison runs to refine details.
 - Reverse-engineered the audio codec format and implemented an audio encoder.
 - Although no actual content was created, the groundwork was laid for future development.
 - GitHub Repository: <https://github.com/sevikkk/robopanda>
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2011 AI Challenge (<http://aichallenge.org/>)

Participated in a Google-sponsored AI programming contest.

- Developed the project in Go language, my first real project in Go.
 - Achieved a global rank of 182 out of 8,000 participants.
 - Ranked 6th out of 58 Go submissions and 12th out of 210 participants from Ukraine.
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2012 MonsteRap 3D printer (<https://github.com/sevikkk/VP2motion>)

Built a 3D printer when they were rare in Ukraine.

- Started with a Proxxon desktop mill with a CNC upgrade.
 - Attached a MakerBot extruder and ran Marlin firmware.
 - Due to slow speeds, implemented FPGA-based motion control.
 - Used an embedded 6502 processor with software in C using SDCC and NES16 runtime.
 - Transitioned to a Mendel90-based frame for better performance.
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2022 ValuRap 3D printer (<https://github.com/sevikkk/valurap>)

Developing a new 3D printer with advanced features.

- Lead screws for Z-axis; linear rails for X and Y axes.
- IDEX kinematics for independent dual extrusion.
- E3D extruders, vision-based bed leveling, and extruder alignment.
- Uses two Orange Pi boards as the main controllers.
- Custom PCBs with STM32 controllers for heating control.

- FPGA for motion control.
- Hardware cubic spline motion control.
- FreeRTOS-based STM32 software.
- OpenCV for vision processing; NumPy and pandas for offline motion planning.
- Vue.js-based web control panel.
- Fully modeled in FreeCAD with Python scripting for frame parts positioning.

Education

1992 - 1998 Master of Computer Science (Computer Aided Design Systems)
Faculty of Electronics
National Technical University of Ukraine "Kyiv Polytechnic Institute", Kiev, Ukraine

1988 - 1992 Bachelor of Computer Science
(Electronic computers, devices and equipment)
Kiev Optical and Mechanical College, Kiev, Ukraine
