Vladimir Yu. Ivanov

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Software Engineer (10+ years), Moscow

SUMMARY

- Proficient engineer with focus on **3 domains**: Computer Science, Electrical Engineering, Machine Learning.
- Broad practical experience in **3 areas**: Consumer Electronics, Industrial IoT and Robotics, Self-Driving Technologies.
- Help to solve software and hardware problems for **4 types** of companies: Outsource, Startup, Product, Bigtech.

SKILLS

• **main languages**	C++(17), C(99), Python(3), Bash, Assembler (8 bit)	• **libraries**	STL, Boost, OpenCV, Eigen, OpenSSL, Qt, ROS(1), FlatBuffers, CAF (actor model)
• **build config**	CMake, Make, Conan, Bazel, Docker (Dev Containers, Cross)	• **linux infra**	systemd services, kernel modules (drivers), deb packages (CPack, debhelper), Buildroot
• **version control**	Git, Subversion (git-svn), DVC	• **ci/cd**	Jenkins, GitLab CI, Azure DevOps (TFS)
• **system design**	GRASP, SOLID, GoF, Algorithms	• **data science**	image classification (CNN, transfer learning)
• **unit testing**	Google Test, Catch, PyTest	• **interfaces**	UART (RS-232), SPI, I2C, CAN, GPIO
• **problem solving**	GDB, Valgrind, Strace, Ltrace, Sanitizers, Wireshark, Perf	• **embedded**	lab equipment, schematics, board bringup, RTOS (Eclipse ThreadX), PLC (B&R)

EXPERIENCE

Cognitive Robotics (cognitivepilot.com): Autopilot core design for agriculture and public vehicles — Feb 2023 – present
Principal Software Engineer — Moscow

· Increased and stabilized IMU frame rate over UDP on 5 % between Control Unit (Jetson) and Navigation Module (arm64).
· Decoupled NN inference (Traffic Lights classifier) from Navigator via interface and intergated into 1 new tram module.
· Implemented and inregrated radar controller (SocketCAN, Kvaser) in 2 modes: targets detection (tracking), altitude measure.
· Integrated Redis support into LoRa daemon on Navigation Module (arm64) to stream RSSI into Control Unit (Jetson).
· Suggested and integrated git-svn tool to boost SVN mono-repository experience. Tool was in demand by 5 software engineers.

Kaspersky Lab, Aprotech (aprotech.online): Industrial data diodes development with KasperskyOS — Feb 2022 – Sep 2022
Senior Software Engineer — Moscow

· Helped to save product value: ported MQTT publisher prototype on new code base and added MQTT over SSL support.
· Reduced attack surface on product via minimazing cryptographic providers from 2 to 1: OpenSSL+MbedTLS to OpenSSL.
· Improved user experience via 1 useful feature – logging product info: semver, build date, Git SHA, CI Id and arbitrary label.
· Fixed issue with secure connection between product and Siemens CNC. Root cause – invalid X.509 certificate generation.

Yandex, Self-Driving Group (sdg.yandex.ru): Contribution to various self-driving technologies — Oct 2019 – Jun 2021
Software Engineer — Moscow

· Integrated new orientation (IMU) and localization (GNSS) device into electrical and network rover infrastructure (GeoHub).
· Implemented 2 features for GeoHub: power rails monitor (ADC driver, ROS node), config for IMU frame transformation.
· Ported rootfs switcher from amd64 (PC) to arm64 (Jetson AGX Xavier). Covered 2 scenarios: Yandex.Rover, Xavier farm.
· Camera pipeline. Reduced logging size via ring buffer (Boost). Implemented 9 new status monitors and camera frames filter.
· Configured CI (TeamCity) for 2 third-party dependencies (ser2net, RTKLib). Artifacts – deb packages (arm32, arm64, amd64).

Arrival Robotics (arrival.com): Creation of flexible robotized industrial factory technology — Jun 2017 – Sep 2019
Lead Software Engineer — St. Petersburg

· Launched programmatic control for 4 industrial robot manipulators. Vendors: Kuka, Fanuc, ABB, Universal Robots.
· Contributed 1 feature to robotic simulator (Gazebo): control of scene objects via keyboard (moving, rotation).
· Implemented SW (REST) for robotic tool controller. Launched 3 kinds of tools: jaw gripper, glue gun, tool changer.
· Helped to prepare 2 demo days for investors at local lab (St. Petersburg, RU) and at robotic factory (Banbury, UK).
· Tech interview holding. Reviewed more than 10 candidates: embedded SW engineers, HW engineers, QA engineers.

Rhonda Software (rhondasoftware.com): Support and development of digital still cameras firmware — Oct 2012 – May 2017
Software Engineer (III, II, I) — Vladivostok

· Supported Camera-SDK components: Embedded Linux and RTOS (ThreadX) device drivers, firmware burning tool (Qt).
· Implemented raw data transceiver library. Cross-platform (Windows, Linux, RTOS), multi-protocol (USB, UART, TCP).
· Performed products bringup (EVT and DVT) in electronics factories for 5 customers: Nanit, Fusar, Glide, Revl, Soloshot.

- Supported SW for still cameras. Drivers: CCD/CMOS, BSP, NAND, DRAM, LCD. Firmware burning tool (WinForms).
- Resolved a number of MP-blocking SW issues for 6 camera brands: Nikon, Pentax, Fujifilm, Samsung, Garmin, Ability.

Spider Pacific : Designing and manufacturing of applied devices for local market   Sep 2010 – Sep 2012
Electrical Engineer   Vladivostok

- Designed HW of 4 device prototypes via end-to-end process: schematic (Eagle CAD), firmware (C99), PCBA.
- Utilized MCU (AVR), text LCD, accel-gyro sensors, vacuum tubes, op-amps, domain-specific IC and more.

EDUCATION

University of Science and Technology «MISIS» (en.misis.ru)   2020 – 2022
MSc. Data Science. GPA 4.7 out of 5. (not completed)   Moscow

Far Eastern Federal University (dvfu.ru/en)   2005 – 2010
Engineer. Information Systems and Technologies. GPA 4.5 out of 5.   Vladivostok