Maksim Vinogradov

Software Engineer

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Summary

I am a software engineer with 4+ years of experience specializing in software development, brain-computer interfaces, self-driving cars, optics and fiber-optic communication lines. Throughout my career, I have solved problems related to GUI development, backend development, signal processing, machine learning, neural networks, computer vision, optical design and working with databases. Looking for an opportunity in a new project as well as in a new field.

Skills

- **Programming Languages:** C++17, Python, Matlab, SQL, JavaScript, VBA
- **Libraries:** Qt, QML, ImGui, FlatBuffers, ZeroMQ, Google Test, Unifex, OpenCV, NumPy, SciPy, Pandas, Matplotlib, PyTorch, SQLite
- **Software:** CMake, Conan, Git, GitLab, Linux, Visual Studio, Xcode
- **Languages:** English (*Upper-Intermediate*), Russian (*Native*)

Work Experience

Software Engineer — [Gelo BCI](#) — *Jul 2022 – Current*
Remote

- Developed and maintained [Mind Tracker](#) (an application for tracking and improving productivity which works in pairs with a device, reading signals from the brain), its SDK and API using C++ on Windows and MacOS.
- Responsible for developing algorithms to calculate heart rate, emotional states, and productivity metrics, resulting in a more than 200% increase in user numbers.
- Enhanced EEG signal quality through improved signal processing algorithms, resulting in more accurate assessments of human emotional states and productivity metrics. Increased filtering algorithm performance by up to 20 times.
- Mentored new employees and attended technical interviews.

Software Engineer — [NAMI](#) — *Jan 2022 – Jul 2022*
Moscow, Russia

- Developed and maintained modules for a self-driving car and tested them on a real vehicle.
- Led the development of a LiDAR-based object detection system for autonomous vehicles, utilizing neural networks, C++, ROS2, OpenCV, PCL, Python, PyTorch, libtorch, ONNX, and TensorRT.
- Achieved 40 ms object detection speed by using low-level code in C++ and TensorRT.

Software Engineer — [T8](#) — *Oct 2019 – Dec 2021*
Moscow, Russia

- Developed and maintained software for the design of fiber-optic communication lines.
- Single-handedly developed a desktop ERP application for my department, including the independent creation of the user interface and architecture, using C++, Qt, and MS SQL Server.
- Initiated migration from VBA to C++, Python, and GitLab in my department, resulting in over a 2x increase in development speed and significant enhancements in software scalability and quality throughout the company.

Education

Master of Engineering — [Bauman Moscow State Technical University](#) — *Sep 2014 – Sep 2020*
Moscow, Russia

- Major in Laser Engineering and Laser Technologies. GPA: 4.8 out of 5.0.
- Major's thesis: "Optical system for capturing and moving micro-objects"