Dmitry Sviridkin, Software Engineer

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Professional Summary

Experienced Systems and Embedded Software Engineer with over 8 years of experience in C, C++, and Rust. Specialized in low-level development, system programming, and static code analysis. Author of "C++ Programmer's Guide to Undefined Behavior", a collection of the intricacies of C++. Former instructor in Linux system programming at Saint Petersburg State University and C++ programming at the Higher School of Economics. Passionate about robust software design and educating the next generation of developers.

Skills

- Programming languages: C, C++, Rust, Python
- OS: Linux, Unix
- Tools: CMake, Git, Docker, Perf, eBPF, Intel VTune, GDB, ptrace, Jupyter Notebooks, LaTeX
- Frameworks & Libraries: Qt, Boost, OpenCV, IPP, SRILM, OpenFST, Kaldi ASR, Pybind11, Numpy, Tokio (Rust), Hyper, Axum
- Mentoring, Code Reviews, Profiling & Optimizations
- Math Modeling, Statistics, Graph Theory, Digital Signal Processing, Algorithms and Data Structures

Experience

Software Engineer II, CloudFront, Amazon Web Services

London, The United Kingdom **Oct 2022 – Present**

- Leading the team on core optimization projects. Achieved 20% latency improvement for P90, P99 & P100
- Built the backend for CloudFront KeyValueStore feature
- Extended the JavaScript runtime engine to introduce CloudFront KeyValueStore module
- Found, root-caused and mitigated the DDoS vectors in core components
- Mentoring team on Rust adoption
- On-boarding customer's tech teams to the new features

Visiting Lecturer, Saint-Petersburg State University (SPbU)

Saint-Petersburg, Russia **Feb 2021 – Jun 2022**

- Taught Linux system programming courses, covering topics such as process management, inter-process communication, system calls, virtual file systems, seccomp, eBPF, ptrace and other
- Designed and delivered comprehensive course materials and practical assignments to undergraduate students

Senior Software Engineer, Arrival

Saint-Petersburg, Russia **Jun 2021 – Oct 2022**

– Built factory orchestrating service for the robot cell. Operation with KUKA robots and Gocator snapshot sensors.

– Developed computer vision algorithms for feature detection & refinement on the 3D point clouds.

Assistant Lecturer, Higher School of Economics (HSE)

Saint-Petersburg, Russia **Sep 2019 – Jun 2020**

– Conducted C++ programming courses, emphasizing modern C++ standards and best practices

– Guided students through core C++ concepts and facilitated project-based learning

Software Engineer, Speech Technology Center

Saint-Petersburg, Russia **Aug 2019 – Jun 2021**

– Built the FST-decoder for hybrid speech recognition system with tight memory and runtime restrictions

– Developed the method to store and construct on-the-fly extension for FST-language model to support topic-specific tuning for the speech recognition system

– Worked on optimizations for models built via Kaldi framework

Software Engineer, Research institute of radio communication

Rostov-on-Don, Russia **Jun 2017 – Aug 2019**

– Developed signal processing algorithms for UAV detection and triangulation

– Built backend to synchronize and process trajectory results for multi radar system

– Built software for portable UAV-detector based on USRP and HackRF kits

– Developed a decoder for intercepted video signals

ML Engineer, STEL Computer Systems

Rostov-on-Don, Russia **May 2016 – May 2017**

– Prepared data pipelines for speech recognition system

– Trained models (HMM + FST) via Kaldi ASR Toolkit

Education

Master of Science in Computer Science

Southern Federal University, Rostov-on-Don, Russia **2017 – 2019**
Conducted optional Digital Signal Processing and Algorithms & Data Structures courses for first-year students

Bachelor of Science in Applied Mathematics

Southern Federal University, Rostov-on-Don, Russia **2013 – 2017**
Participated in ACM ICPC competitions. Reached semi-finals.

Projects

Personal Visit Card

nekrolm.github.io

Built as a static HTML page with injected WASM modules. WASM generated from Rust code, with Bevy engine for the Minesweeper game.

UBBook, C++ Programmer's Guide to Undefined Behavior

github.com/Nekrolm/ubbook

Languages

Russian (native), English (professional proficiency)