Viacheslav Barinov

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Brief description

My major activity – C/C++ development on Linux-based platforms.
I really enjoy the OpenSource software and interaction with community and do my best to contribute to OpenSource projects which I'm interested in or have to deal with at day-time job.

Commercial Projects

C/C++ / Linux

Tizen https://tizen.org
Tizen toolchain support and enhancement.
Our team is working on toolchain support and enhancement accordingly to requests of Samsung developers all over the world and own vision of perfect toolchain. We are the guys who created an ARM64 Tizen 3.0 in the beginning of 2014 and stabilized the OS even before first 64bit Android release.
Digging inside GCC and Binutils to find why stack trace tells lies to developers, debugging on-device soft using gdb through port forwarded using netcat over Wi-Fi because kernel is not finished and there is no other way to connect, finding a way to implement needed feature the right way instead of workaround in the limited time–that's about me.
After promotion to project lead the task set widened with looking for appropriate customer for such experience and directing team members' fun into scope needed by commercial divisions. Six years of successful projects say I'm not totally useless in this field as well.
Our team was invoked into code analysis movement and I joined dynamic analysis forces to improve and promote sanitizers among Samsung. Now, as far as I know, we're the first team who performed full-system sanitization (not sure if someone tried that anyway).

Experience

2021 - still here **Staff Engineer**, *Samsung Research Russia*, Moscow, Russia.
Rust evangelism among SRR developers, research projects

2017 - 2021 **Staff Engineer/Team Lead**, *Samsung Research Russia*, Moscow, Russia.
Toolchain improvement, dynamic software analysis research, Improving Tizen code base from toolchain point of view: dynamic analysis (sanitizers), new optimizations. Applying dynamic binary analysis technologies to embedded systems (Tizen RT)

2014 - 2017 **Leading Engineer/Team Lead**, *Samsung Research Russia*, Moscow, Russia.
Toolchain support and enhancement. Improving Tizen code base from toolchain point of view: dynamic analysis (sanitizers), new optimizations

2013 - 2014 **Leading Engineer/Team Lead**, *Samsung Research Russia*, Moscow, Russia.
Toolchain support (GCC compatibility issues maintaining and bugfixes)
Solving architecture related issues (porting from arm to arm64)

Feb 2012 - 2013	**Software Engineer**, *Samsung Research Russia*, Moscow, Russia. Native mobile software optimization (C/C++) Profiling and optimization tool development (Linux kernel module profiling part, python GUI and statistical and reporting module) Software development.
Sep 2006 - Feb 2012	**Expert Engineer**, *InterRadioService LLC.*, Moscow, Russia. Hardware engineering Software development (mostly for hardware support). Maintaining compatibility features for ancient (40 yrs and more) devices. Fieldwork with hardware and support during full-scale tests.

Development skills

Programming Languages

Expert	C, C++
Intermediate	Rust, Python, ARM Assembly Language
Basic	Perl, x86 Assembly Language

Frameworks and tools

Development	Build system related tools: Makefile, m4, cmake, shell scripting, the GNU tool set built around traditional *nix software development.
Debug	Low-level system debug: gdb, kdb, U-Boot debug
GUI	Qt (C++ and Python versions), basic web-interface
OS	Linux-based (from LFS and Gentoo to full rpm-based Tizen)
VCS	git, svn

Server administration skills

OBS	Deep knowledge of service internals, have experience in setup, configuration and bootstrapping from scratch for rpm-based Tizen OS
General	Setting up and maintaining all servers needed for work – CI, source hosting, web-interfaces just need enough time.

Publications

Software Analysis

2019	**GNU Tools Cauldron**, *https://gcc.gnu.org/wiki/cauldron2019*. Report *Annotating std::string with AddressSanitizer*
2017	**GNU Tools Cauldron**, *https://gcc.gnu.org/wiki/cauldron2017*. Report *Applying GNU GCC Address Sanitizer to whole Linux distribution*
2017	**2017 Ivannikov ISPRAS Open Conference**, *http://isprasopen.ru/en/*. Report *Applying GCC-Based Address Sanitizer Dynamic Analysis Technology to Tizen OS* . Published in Proceedings of 2017 Ivannikov ISPRAS Open Conference (ISPRAS). DOI: 10.1109/ISPRAS.2017.00015.

Education

2015	**People Management**, *http://www.luxoft-training.com/*, Moscow, Russia. Project manager tasks related to grouping people into team
2014	**Project Management**, *http://www.luxoft-training.com/*, Moscow, Russia. Project manager quickstart
2005 - 2011	**Electronics Engineering**, *Bauman's Moscow State Technical University*. M.Sc. in Electronics device and systems engineering

Public activity

LinkedIn	https://linkedin.com/in/rayslava
GitHub	https://github.com/rayslava