Roman Storozhenko

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Summary

- Seasoned developer with more than 20 years experience in different domain areas
- Linux Kernel, Embedded and Firmware developer enabling the latest RDT HW in SW for Intel® Xeon® CPUs: Intel RDT utility
- Author [Exploring ELF files using pyelftools] & [Core Knowledge That Modern Linux Kernel Developer Should Have].
- Volunteer participating in hackatons and awards as a mentor and judge [Globee].
- RISC-V enthusiast having certifications [RVFA]
- Community member in RISC-V International. Individual Supporter in The Linux Foundation organization.
- Open source proponent having Linux Kernel patches accepted [patches]. Developer enthusiast [GitHub].
- Industry expert asked on Linux Kernel topics [Linux Developer Skills: Everything You Need to Know]

Skills

- **Linux kernel**: general knowledge, driver development
  - **Advanced, cloud level technologies**: Intel® RDT Framework for Intel® Xeon® CPUs: CMT, L2 & L3 cache CAT and CDP, MBM, MBA, I/O RDT, SNC, CBA, etc...
  - **Networking**: Wi-Fi, Ethernet, Bluetooth Low Energy, PCIe drivers for SR-IOV and S-IOV capable devices
  - **Buses and protocols**: PCIe(3.0 and 4.0), UFS, SCSI, I2C, SPI, 1-Wire, MDIO
  - **IO stack**: VFS, block layer, SCSI- and UFS-based device drivers
  - **Tracing**: ebpf, xdp, kprobes, tracepoints, ftrace, perf
  - **Architectures**: x86, RISC-V, ARM
  - **Kernel special purpose FS**: procfs, sysfs, debugfs, tracefs, resctrl, hugetlbfs
  - **File systems**: Ext-family
- **Dev boards**: **RISC-V**: Beagle-V Ahead(Alibaba T-Head TH1520 SoC), StarFive 2(JH7110 SoC), RVBoards(Allwinner D1 SoC). **ARM**: Raspberry PI, Exynos-based. Custom hardware boards
- **Hardware debug tools**: oscilloscopes, multimeters, bus analyzers
- **Embedded Linux**: Yocto Project, OpenWrt, U-Boot, SWUpdate, etc...
- **Virtualization**: QEMU-KVM, Virtualbox, Vmware Workstation, Docker
- **Linux userspace**: Shell scripts, Python, POSIX
- **Languages**: C(C99 standard, Clang and GCC compilers), ASM(RISC-V, x86, PIC-family), Python
- **Version contrlol**: Git, Mercurial, Perforce, Svn

Work Experience

Intel **Gdansk, Poland**
Team Lead, Senior Linux driver developer *June 2022 - Present*

For more than 50 years, Intel and our people have had a profound influence on the world, driving business and society forward by creating radical innovation that revolutionizes the way we live.

Project: Enabling the newest HW features of Intel® RDT Framework for the upcoming generations of Intel® Xeon® CPUs
Accomplishments:
- ✓Cannot disclose details due to NDA

Technologies: RDT, C, Linux Kernel, etc...

Intel **Gdansk, Poland**
Linux driver developer *October 2021 - June 2022*

For more than 50 years, Intel and our people have had a profound influence on the world, driving business and society forward by creating radical innovation that revolutionizes the way we live.

Project: Custom version of Linux ice driver for smartNICs (Intel E8XX series) and a wide range of pre- and post-production cutting-edge network equipment
Accomplishments:
- ✓Cannot disclose some details due to NDA
- ✓Implemented VLAN filtering features

Technologies: C, Linux, Python, ftrace, perf, ebpf, PCIe, SR-IOV, S-IOV, QEMU, KVM, libvirt, docker, SoC hardware, Ethernet

Zorachka Inc. **Minsk, Belarus**
Embedded developer *Apr 2019 - Sep 2021*

A team of dedicated professionals with a mission to provide the best solution for the smart home.

Project: Homam 64GB home camera
Accomplishments:
- ✓Implemented different firmware versions for all hardware revisions for camera's PCBs
- ✓Implemented the bootloader able to update PCB microcontroller's firmware
- ✓Implemented GPIO Linux driver supporting custom hardware
- ✓Updated ASoC-level Linux driver for custom audio chip enabling mic recording and 2-way audio
- ✓Updated proprietary Wi-Fi Linux drivers for the Wi-Fi chip used in the product
- ✓Took part in the process of the product WI-FI certification by Wi-Fi Alliance ®. Investigated some failed test cases using wireshark and fixed SW to make those passed.
- ✓Enabled userspace's SW support of Apple HomeKit ®
- ✓Wrote the userspace's uploader utility for the microcontroler's bootloader enabling reflashing FW

Technologies: C, Linux, Python, ftrace, perf, ebpf, Embedded development tools, ARM-based SOC, Wi-Fi, Bluetooth Low Energy, custom hardware, bus analyzers, oscilloscopes, multimeters

SK Hynix memory solutions Eastern Europe **Minsk, Belarus**
Embedded developer *May 2018 - April 2019*

SK hynix memory solutions Eastern Europe is a leading R&D center for flash firmware and software development

Project: Different projects related to NAND-based storage products
Accomplishments:

- ✓Implementted passing some high-level filesystem information from the customized UFS Linux Kernel driver to the NAND-based storage sample firmware in order to help sophisticated firmware algorithms work more effectively
- ✓Introduced some new tracepoints to the Linux kernel VFS and Block layers allowing gathering required statistics using ftrace
- ✓Participated in creating a flavor of Host Performance Booster algorithm in a custom Linux Kernel UFS storage driver
- ✓Written different kinds of userspace utilities that allow handle some statistic obtained from different NAND samples and show it in a convenient form.

Technologies: C, Linux, Python, ftrace, perf, Embedded development tools, ARM-based SOC, custom hardware, NAND, Host Performance Booster

Sole Enterpreneur **Taganrog, Russia**
Senior python backend developer *Dec 2014 - May 2018*

Softline **Taganrog, Russia**
Software developer *Aug 2012 - Dec 2014*

Education

Taganrog State University of Radioengineering **Taganrog, Russia**
Engineering degree in Computer Science *Sep 1996 - May 2004*
Faculty of Automation and Computer Engineering
Graduate work: Wavelet transforms based images compression codec