# PAVEL SKRIPKIN

Systems Software Engineer
/ OS Kernel Engineer

## Profile

Low-level systems software engineer with 6 years of experience, primarily focused on OS kernel development. Worked on production kernels, platform-specific components, and core OS subsystems.
Contributor to Linux, LLVM, and QEMU.

## Employment

Aug 2023 — Present
Moscow

### Kaspersky

Worked on kernel hardening and core kernel teams in KasperskyOS.

**Key responsibilities**

- Runtime sanitizers and kernel hardening mechanisms
- Static analysis integration and CSA improvements
- Kernel memory management
- CPU scheduling
- Synchronization primitives
- Kernel/libc interface
- Entropy source drivers
- Bring-up of new hardware platforms

**Technologies**

C, ARMv8, operating systems, static analysis, sanitizers, low-level debugging

Nov 2021 — Aug 2023
Moscow

### Samsung

Worked on the development of a proprietary ARMv8 operating system kernel, including Trusted Execution Environment (TEE) components.

**Key responsibilities**

- Kernel memory management
- Synchronization primitives
- Porting and adaptation of the syzkaller kernel fuzzer
- Device Tree Blob (DTB) support and platform integration
- Trusted Execution Environment (TEE) development
- Low-level kernel debugging and hardware bring-up

**Technologies**

C, ARMv8, operating systems, TEE, Linux kernel internals, syzkaller, DTB, low-level debugging

June 2020 — Nov 2021
Moscow

### NTC Raduga

Worked on Linux kernel-space drivers and low-level software for FPGA-based hardware platforms.

**Key responsibilities**

- Development of Linux kernel drivers for FPGA devices
- User-space system utilities for interacting with kernel drivers
- Low-level hardware communication and debugging
- Driver integration and testing

**Technologies**

C, Linux kernel, device drivers, Linux, low-level debugging


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**Technical Skills**

- C, Rust, C++
- Linux kernel and operating system development
- x86-64 and ARMv8 architecture
- Performance profiling and low-level optimization
- Device drivers
- TEE

**Languages**

Russian (native)
English (B2+)

**Social**

GitHub
LinkedIn
Personal site

## Open Source Contributions

Contributor to open-source systems projects, including Linux kernel, LLVM, and QEMU.

**Linux kernel:** commit history
**LLVM:** commit history
**QEMU**: commit history
**Nominated for Google Open Source Peer Bonus in 2023 for contributions to the Linux Kernel.**
Google Open Source Peer Bonus announcement

## Selected Technical Projects

**Custom OS**
Work-in-progress microkernel-style operating system written in Rust.
Key features:
• In-kernel scheduler built on a custom async runtime
• Custom IDL language with Rust bindings
• User-space async runtime built on asynchronous IPC
• ARMv8 support
GitHub: sam_os

**Lock-free buddy allocator**
Implemented a lock-free buddy allocator based on an academic algorithm.
GitHub: lock_free_buddy_allocator

**Low-level Optimization Experiments**
Solved performance-oriented programming tasks focused on AVX2, cache behavior, branch prediction, profiling with perf, and low-level CPU optimization.
Highload.fun Profile

## Education

2018 — 2024
Moscow

### National Research University Higher School of Economics, MIEM

Bachelor's Degree in Computer Security

**Thesis**: CPU jitter-based true random number generator
Designed and implemented a TRNG based on CPU execution-time jitter, with integration considerations for Russian cryptographic standards.