Nikita Fedorov

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Education

Moscow Institute of Physics and Technology — Dolgoprudny, Russia
Phystech-school of radio engineering and computer technology — 2022 - 2026 (present)

Working experience

Internship at the Institute of System Programming RAS — Summer 2023
RTOS development for the aviation industry

- The work task aimed to improve the page table creation process for the operating system loader to provide Write xor Execute memory protection mechanism for platforms that support page table virtualization.

Academic background

System Programming Fundamentals — Dedinsky I.R.

- A year-long course with lectures and practical labs covering C, x86 Assembler, computer architecture, principles of constructing large projects, compiler fundamentals, profiling and optimisation features. My first projects were implemented, for example: Programming language and binary translator, Hash table research and optimization, Projects for SIMD studying.

Operating System Kernel Design — ISP RAS
(Cheptsov V.Yu., Khoroshilov A.V.)

- The course provides immersion in the specifics of operating system kernel working, implementation and enhancement of the training OS functionality. Most aspects of kernel features are covered: initialisation, virtual memory, interrupts, timers drivers, working with UEFI, ACPI and other important aspects of operating systems. As part of the individual assignment of the first part of the course, the ability to profile the kernel and processes using GPROF was implemented.

I also plan to study before starting the internship

- Fundamentals of computing systems architecture from SBER - RISC-V architecture, principles of logical design and software modeling of microcontrollers, optimization of programs for given computing systems.
- Theory and practice of program compilation from SBER - studying the main stages of program compilation, working with Flex, Bison and LLVM.
- Deep Learning School from FPMI - basics of machine learning and neural networks.

Technical Skills

Programming languages	:	C, Basic C++, x86-64 Assembly, Python
Tools	:	makefile, git, valgrind, gprof, gdb, qemu, Latex

Others

- English (B2)
- Desire to learn something new and willingness to work hard
- Ability to change the scope and delve into unfamiliar material