

ROMAN GLAZ

Software engineer, architecture researcher

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EXPERIENCE

OS intelligent scheduling

Huawei RRI

📅 jul 2022 – aug 2024

- International patent "Computing performance improving method and electronic device", [Google patents](#).
- Algorithms for linux kernel scheduler, workload-based CPU & memory frequencies scaling, power models for ARM64 mobile platforms.
- Benchmark for kernel schedulers (reproduction of microarchitecture event statistics and thread synchronization patterns for real mobile apps).

Computer system simulation

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📅 sep 2024 – now

- NDA

PET PROJECTS

- [RISC-V 64-bit functional simulator](#) – custom simulator with RV64IM instruction set interpretation via threaded-code, MMU & TLB.
- [Echo Virtual Machine \(EVM\)](#) – custom register-based virtual machine with incremental garbage collector.
- [Vokerlee SSH](#) – custom secure shell implementation (TCP + UDP with delivery guarantee) with symmetric & asymmetric encryption, linux virtual terminals & PAM & cgroups.
- [Incremental *inotify* daemon-backuper](#) – incremental backup-system (daemon), implemented via *inotify* Linux kernel subsystem.
- Gem5 & Linux:
 1. [Gem5](#) – added cache PMU events for ARM64, 3-level cache CPU-cluster system.
 2. [Linux 6.1 patches for Gem5](#) – implemented drivers *cpufreq* & *devfreq* (+ *clk*) for DVFS support for all components in Gem5.
- [LLVM practise](#) – LLVM front-end of imperative language & own LLVM back-end of RISC-V like architecture with custom graphics extensions (binaries are powered by own [RISC-V 64-bit simulator](#)).
- [RISC-V 64-bit CPU pipeline simulator](#) – low-level simulator (System Verilog) of in-order CPU core pipeline with support of execution of ELF files with RV64I instruction set.

EDUCATION

Radio engineering and computer technology

[Moscow Institute of Physics and Technology](#)

📅 sept. 2020 – now

- Bachelor's CGPA 9.41/10, top 1 department graduates, top 4 university graduates.
- Bachelor thesis topic: "[Memory aware CPU frequency scaling policy in Linux kernel](#)".
- Master's CGPA 9.47/10.
- Master thesis topic: in progress.

TECHNICAL SKILLS

Programming languages / Architectures

C11, C++20, Python / RISC-V, x86-64, ARM64

Core fields

- Computer system microarchitecture & simulation.
- Linux-API system programming.

Actual fields

- Linux kernel programming (scheduler & concurrency primitives).
- Neural networks hardware-based optimizations.

Other fields

- [Machine learning](#).
- [Compilers internals \(LLVM\)](#).
- [Computational maths](#).

Technologies

[Linux API](#), [MPI](#), [OpenMP](#)

Languages

English – upper intermediate

EXTRA INFO

- Cryptocurrency algo-trading average enjoyer
- Member of the national team for the International Physics Olympiad 2020 (cancelled due to Covid19)
- Tutor in introduction to compilers & x86-64 architecture courses in 2021/2022
- Powerlifting enjoyer