kolya.kasparov@gmail.com

+7 (965) 342 - 14 - 11

Moscow

nniikon

Russian Native
English B2-C1

Skills

Languages:

Experienced:
C, C++, SystemVerilog, CUDA
Familiar with:
x86-64, RISC-V asm, Python

Tools

perf, git, make, cmake, LaTeX, bash, Doxygen, Graphviz, GitLab+GitHub CI/CD, Docker, Vivado, Verilator

Area of interest

Modern CPU and GPU microarchitecture, compilers, performance optimizations

Kasparov Nikolay

Second year MIPT student

Projects

Mandelbrot Set — March 2024

Mandelbrot fractal renderer with various optimizations

Toolset: C/C++, perf, gdb(edb), python, make

- SIMD optimizations
- Multi-threading
- Thread pool library

Cman language — June 2024

Compiler to x86_64

Toolset: C/C++, x86_64 assembly, Graphviz, Make

- Hand-written recursive descent parser
- Intermediate representations (e.g., AST, IR) for scalability and code optimization
- Both assembly code and binary executables are being generated
- Powerful logging and dumping systems to simplify debugging
- Developed (but not yet deployed) Yacc-like parser generator

Real Gas Simulation — June 2024

Highly optimized gas simulation for a physics project

Toolset: C++, perf, make

- GLM for computations
- OpenGL for rendering
- Spatial partitioning optimization
- Tons of various optimizations resulting in ~20x performance boost

KolyaGPTv2 — In Development

Header-only C++ library mimicking PyTorch

Toolset: C++, GTest, Docker + DockerHub, GitHub CI, CUDA

- Modulare architecture
- Uses best practices in unit testing with Google Test and CI/CD
- GPU acceleration using CUDA

Work Experience

Baikal Electronics (AI team)

2024 Jule - August

Intern developer

Developing high-performance libraries in C/C++ for AI accelerators.

Education

Moscow Institute of Physics and Technology (MIPT)

2023 - 2027

Dolgoprudny, Russia

Second-year student at the Department of Radio Engineering and Computer Science.

GPA: 8.1/10.0

System programming and compiler technology course (MIPT)

2023 - 2024

Dolgoprudny, Russia

Graduated with a GPA of 10/10.

Achievements

Winner of the Phystech Olympiad in Physics.

February 2023

Scored 41/50

Winner of the MSU Olympiad in Physics.

March 2023

Scored 85/100

Second Place Winner – Sber Verilog Hackathon.

November 2024

Developed a game for FPGA, using SystemVerilog, Vivado, Verilator