

MAXIM TIMOSHKIN

MIPT DREC STUDENT

18 YEARS OLD



SUMMARY

I'm C developer with some knowledge of C++, x86-64 assembly and python. Intrested in projects related to system programming and compilers. I enjoy working in team, but it won't be a problem to do some tasks independently.

EDUCATION

Moscow Institute of Physics and Technology Moscow, Russia

Student of Department of Radio Engineering
and Computer Technology (DREC)

Sept. 2023 - Present

PERSONAL PROJECTS

Esoteric programming language

Esoteric language, written in C++. Uses custom intermediate representation (inspired by LLVM IR). Supports cross-compilation via using uniform AST standart designed in collaboration with other MIPT students. Emits x86-64 (nasm syntax) and SPU assembly.

C/C++ | nasm | graphviz | CMake

Hash table optimizations research

Explores different ways of boosting hash table search performance. Its first part is a detailed comparison of different hash functions. The second one is a report on optimizing the source code.

C/C++ | x86-64 assembly | SIMD | python | tracy | CMake

Mandelbrot set

Comparison of different CPU rendering methods. Includes avx512 instructions, compiler backend optimizations and a straightforward solution.

C/C++ | SIMD | SFML | CMake

Software processing unit (SPU)

Virtual machine that uses Harvard architecture. Consists of three parts: assembler, disassembler and the processor itself. Capable of displaying color image and has a built-in debugger.

C | SFML | CMake

CONTACT

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[lprime111](#)

SKILLS

C / C++
x86-64 assembly
Python basics
Bash

LIBRARIES

SFML
GTK
LLVM IR

TOOLS

Linux
Git
Make / CMake
Ghidra / EDB
LLDB / GDB
LaTeX / Typst
Graphviz
NASM
GCC / clang
Tracy

PERSONAL QUALITIES

Command work
Responsibility
Curiosity
Diligence

LANGUAGES

Russian: native
English: B2

GRADES

MIPT overall GPA: 7.4 / 10
Programming avg: 9.0 / 10