Maxim Zubakha'18

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System Programming and Applied Mathematics

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Education

MIPT - System Programming & Applied Mathematics

Mathematical Analysis   Algorithms: Analysis & Development
Computer System Architecture & Assembly Languages

📅 Sep 2024 - present time

GPA: 7.6

Personal Projects

Soft Processing Unit (SPU)

📅 Oct 2024 - Nov 2024

C   Make

- Development of an interpreter for a stack processor with support for basic operations
- Implementation of a simplified assembler for translation to binary format
- Creating a stack machine with register and label support
- Video memory simulation via two-dimensional buffer to output simple graphics to the terminal

Esoteric Prison Programming Language

📅 Dec 2024 - present time

C/C++   graphviz

- An esoteric language compiler implementation. Syntax is based on prison jargon
- Convert source code to AST (cross-compilation is provided). Recursive descent parser
- Translation of syntax tree to assembly x86–64 code (under development)

Mandelbrot Set

📅 Mar 2025 - Apr 2025

C/C++   GLSL   SFML 3.0   SIMD   Multithreading

- Baseline CPU implementation using naive iterative algorithms for fractal generation
- AVX256 optimized version leveraging SIMD intrinsics to parallelize computations
- GLSL/OpenGL shader-based GPU implementation for real-time rendering, utilizing parallel processing capabilities of modern graphics cards

Skills & Tools

Skills

C/C++   x86–64 assembly   Python   Bash

Tools

Linux   Git   CMake   Make
Ghidra   radare2   NASM   Graphviz   Doxygen

Libraries

SFML 3.0   GTK 4.0

Soft Skills

Effective communication   Adapting to change
Decision making   Active listening

About me

I am C developer interested in low-level programming and optimizations.
Work well both in a team and alone.
In my free time I play volleyball and make music.