MAKSIM GUDCHIKOV

Computer Science & Engineering

+7-903-293-47-18
karatemaksim0110@gmail.com
MaxGud10
@simka_10

EDUCATION

MIPT
Faculty of FRKT
Applied mathematics and physics
2024 - 2028

ACHIEVEMENT

In school :

- Physics Olympiad Winner Steps Into Trouble
- Prize-winner of the Physics Olympiad Gazprom
- Two-time World Championship medalist

In university :

The championship case :
-Bell & 51 - 2nd place
-Cup Moscow 24 - HQ 15%
-Cup Russian 24 - HQ 15%

Hard skills :

Languages : C, C++, Python, x86_64 assembly

Tools : git, cmake, make, bash, LaTex, gdb, Graphviz, dot, SFML

Soft skills:

- sociable
- I work well in a team
- time management is well developed
- I am constantly studying

LANGUAGE

English — B2

PROJECTS

Onegin | https://github.com/MaxGud10/onegin

- Efficient processing of input data is implemented, divided into strings, punctuation and special characters are taken into account.
- For sorting, an optimized version of the qsort algorithm was used using a stack to control recursion, which improved performance.

Spu | https://github.com/MaxGud10/spu

- An implementation of my own simplified virtual machine that simulates the operation of a single processor.
- The project is divided into two separate programs: the assembler and the machine itself.
- The assembly language was created by me.

Language | https://github.com/MaxGud10/Language

- A translation system has been developed that converts the code in my language into a binary tree and then into an assembly written by me.
- It consists of a FronEnd, a BackEnd, and includes a parser, a lexical analyzer, and an assembler translator with my standard library.

PrintfASM | https://github.com/MaxGud10/PrintfASM

- An assembler implementation of the printf function (x86-64, NASM) has been developed with support for the main specifiers (%d, %s, %c, %x, %o, %b, %%)

Mandelbrot set drawing | https://github.com/MaxGud10/Mandelbrot

- A C++ program has been developed to visualize the Mandelbrot set with support for scaling and fractal movement.
- Optimization of calculations is implemented, including SIMD instructions (AVX2) for parallel data processing and multithreading (std::thread) to speed up rendering

Hash-Table | https://github.com/MaxGud10/Hash-Table

- Project of hash table creation with research of working speed. In this project I worked with profilier (Perf), analyzed distributions of different hash functions and used low level optimizations like SIMD, assembler inserts and aligning to increase speed of hash table.