

YAROSLAV TIKHONOV

MIPT bachelor first-year student
Computer Science & Engineering

PROJECTS

→ Programming Language [[github](#)]

May 2024

Tools: C, Assembly x86_64

My programming language. Consists of several programmes which perform source code tokenization, syntax analysis and translation to NASM.

→ Hash Table [[github](#)]

Apr 2024

Tools: C, Assembly x86_64, perf, radare2

Hash table using linked-lists to handle collisions. In this work I analysed multiple hash-functions and chose the optimal one. Also profile-guided assembly optimizations were made which gave 3x performance boost for search queries.

→ Mandelbrot [[github](#)]

Apr 2024

Tools: C, Assembly x86_64, SIMD extension

The Mandelbrot set visualisation vectorised with AVX instructions which results in 3x performance boost under -O0 and 8x under -O3.

→ Differentiator [[github](#)]

Dec 2023

Tools: C, dot, html, LaTeX

Program capable of taking derivative of complex expression. As a result of differentiation LaTeX report is generated.

→ Akinator [[github](#)]

Nov 2023

Tools: C, dot, html

Expert system which uses binary tree to store data. Akinator can not only guess any term stored in the database but also add new one, give definition or compare two terms.

ACHIEVEMENTS

→ Russian National Olympiad in Physics

Feb 2023

Regional Prize-winner

→ Rosatom Olympiad in Physics

Mar 2023

Prize-winner

→ Siberian Olympiad in Physics

Mar 2023

Prize-winner

OTHER

→ Sphere of Interest

Compilers & formal language theory, compiler optimizations, NLP, machine learning

→ Languages

English (Upper-Intermediate), Russian (native)

→ Hobbies

Volleyball, chess, video editing, hackathons, computer games



CONTACTS



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SKILLS

PROGRAMMING

C, x86 Assembler, Python, Shell

TOOLS

Git, make, perf, radare2, markdown, html, graphviz, LaTeX, valgrind, MS Office

PERSONALITY

- Hard-working
- Self-motivated
- Sociable
- Adaptable
- Having an eye for detail

EDUCATION

Moscow Institute of Physics and Technology, Russia

Department of Radio Engineering and Computer Technology

GPA (informatics): 8/10

GPA (general): 7.5/10

2023 - present