

CONTACT

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SKILLS

Languages:

C, x86-64 Assembly, Python

Tools:

Make, git, edb, KCachegrind, Valgrind, Turbo Debugger

Other:

DOS, LaTeX, dot, SFML

Foreign languages:

English (Intermediate)

ACHIEVEMENTS

All-Russian Olympiad for schoolchildren in geography

Prize-winner (2021)

MIPT 'Phystech' physics olympiad

2st degree diploma (2021)

"Rosatom" physics olympiad

1st degree diploma (2021)

SUBKHANKULOV RUSTAM

MIPT - Applied Mathematics & Physics

EDUCATION

Bachelor of Applied Mathematics & Physics - 1st year
MIPT, DREC - Moscow, Russia

2021 - 2025

GPA: **9.0/10.0**

GPA in programming: **10.0/10.0**

ASSIGNMENTS & PROJECTS

JIT-compiler

GitHub

Tools: C, Make

Supervisor: Ilya Dedinskiy (ded@ded32.ru)

JIT compiler that translates binary code intended for execution by a virtual processor into x86 architecture instructions.

2022

Hash table

GitHub

Tools: C, Make, KCachegrind, Python

Supervisor: Ilya Dedinskiy (ded@ded32.ru)

Hash table implementation with Assembly optimizations. Comparing of different hash functions using hash table.

2022

Mandelbrot set visualization

GitHub

Tools: C, Make, SIMD

Supervisor: Ilya Dedinskiy (ded@ded32.ru)

Mandelbrot set visualization implementation with AVX optimizations.

2022

Alpha-blending

GitHub

Tools: C, Make, SIMD

Supervisor: Ilya Dedinskiy (ded@ded32.ru)

Alpha-blending implementation with AVX optimizations.

2022

Assembly printf implementation

GitHub

Tools: C, X86-64 Assembly

Supervisor: Ilya Dedinskiy (ded@ded32.ru)

Assembly-language implementation of the printf function, calling according to the System V AMD64 ABI convention. Also some string functions implemented in X86-64 assembly.

2022

"Harry Potter" language compiler

2021

[GitHub](#)

Tools: C, Make

Supervisor: Ilya Dedinskiy (ded@ded32.ru)

Compiler for my own programming language. Translating into my own assembly and generating byte-code for virtual CPU. Syntactic and lexical analysis, AST intermediate representation

List data structure

2021

[GitHub](#)

Tools: C, Make

Supervisor: Ilya Dedinskiy (ded@ded32.ru)

Cache-friendly doubly-linked list structure.

The "Akinator" game

2021

[GitHub](#)

Tools: C, Make

Supervisor: Ilya Dedinskiy (ded@ded32.ru)

Parsing data base saved in text format and creating binary tree structure for the game.'Dot' graphic dump of tree.

Differentiator

2021

[GitHub](#)

Tools: C, Make

Supervisor: Ilya Dedinskiy (ded@ded32.ru)

Parsing expressions and symbolic differentiation using binary tree. Simplification of arithmetic expressions (constant convolution).

INTERESTS

Optimizations in static and dynamic (JIT) compilers, low-level optimization, operating systems, processor architecture

PERSONAL QUALITIES & SOFT SKILLS

Learning ability, communication skills, desire to learn new things, teamwork