



DOLGOV ALEXANDER

2st year student, 19 years old

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Dolgoprudny, Russia

KetchuppOfficial

STRENGTHS

Responsible Pedantic
Stress-resistant Inquisitive
Communication skills
Quick learner

SKILLS

Programming languages:

C C++ x86-64 assembly

Tools:

make CMake git
valgrind gdb graphviz
kcacheGrind

Other skills:

Bash LaTeX Markdown

LANGUAGES

Lang 1: Russian (native)

Lang 2: English (B2/C1)

EDUCATION

Moscow Institute of Physics and Technology | DREC

2021 – 2025 Dolgoprudny, Russia

GPA: 8.5/10

Compiler technology and professional programming | by Ilya Dedinsky

2021 MIPT

Introduction to computer architecture and assembler | by Ilya Dedinsky

2022 MIPT

Uses and applications of C++ | by Konstantin Vladimirov

2022 – 2023 MIPT

WORK EXPERIENCE

Summer internship

August 2022 ISP RAS, Software engineering department, Vitaly Cheptsov team

- Port of an algorithm of fast conversion from floating-point numbers to strings to the standard C library of RTOS

BEST PROJECTS

C++

Triangles |

- Program that intersects triangles in 3D
- Octree is used for spatial partitioning

Matrix |

- Implementation of class representing matrix
- Two determinant computing algorithms are implemented

Tree |

- Implementation of advanced red-black tree
- k^{th} lowest element and the number of elements less than the given one queries are of $O(\log(n))$ complexity

C and assembly

Binary translator |

- Translates binary code generated by the proprietary assembler (a part of "Processor" project) into x86-64 machine code
- Machine code is executed just after translation without making ELF

Processor |

- Assembler/Disassembler: support proprietary instruction set
 - Virtual processor: executes programs written on proprietary assembly
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ParaPF: para print function |

- Small assembly implementation of standard C function printf
 - Supports %b format specifier for binary output
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Hash table |

- Quality of 7 hash functions was examined
 - Hash table search was boosted by x86-64 assembly and SIMD
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