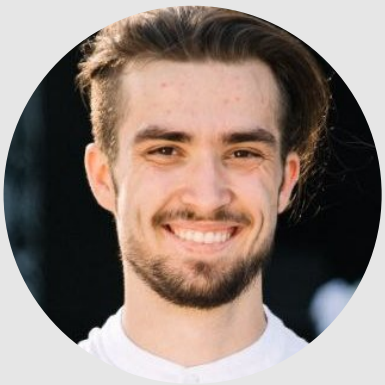
Danil **Gerasimenko**

MIPT student



About me

I'm a 3rd grade student of MIPT DIHT (Department of Innovation and High Technology).

Strengths and Soft Skills

Diplomacy | Creativity | Curiosity | Adaptability | Team Working | Patience | Stress-resistant | Sensible

Professional Skills

Programming Languages:

- C(good practise)
- Assembler(good practise)
- C++(not bat practise)
- Python(auxiliary aims)

Graphical API:

- Vulkan
- SDL 2
- GraphViz
- Unity (student course)
- Unreal Engine (student course)

Other Languages:

- Markdown
- Latex
- Bash (using scripts in testing)

Application Skills:

- Git
- Cmake or Make
- Linux (familiar with Linux shell)

EDUCATION

2021-Ongoing

Bachelor Degree — Dolgoprudniy
MIPT DIHT
Finished courses:
- Linear Algebra;
- Probability Theory
- Combinatorics
- Math statistics
- Math Analysis
- Differential Equations
- General Physics
- Analytical mechanics
- Field theory
- Operation Systems
- Microcontrollers
- Basic of machine learnings

2021-2022

Compiler technology and professional programming — Dolgoprudniy
Ilya Dedinsky
Auxiliary course of C by Ilya Dedinsky.

2022-2023

Uses and Applications of C++ — Dolgoprudniy
Vladimirov K.I.
Auxiliary course of C++ by Vladimirov K.I.

2023-2024

Mathematical basics of visualisation — Dolgoprudniy
Afanasiev V.O.
Auxiliary course about mathematical side of graphical engines' development

July - September 2023

Internship in MCST — Moscow
MCST
Internship in MCST with problem task of developing a simple program for testing binary code.

October 2023 - Ongoing

Work in ISP RAS — Moscow
ISP RAS
At the moment I work in ISP RAS as a student cooperation. I am engaged in rendering a scene with large number of objects using Vulkan API.

PROJECTS

Assembler project:

Development of simple binary compiler as task from internship in MCST. I implemented several calculating and algorithmic optimizations which improved KPI of assembler modules of binary compiler.

C projects:

Realisation of stack architecture using #define style coding.

Contacts

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Pridona Chalvashi, 20, Batumi

Languages

Russian - Native

English - B1-B2

PROJECTS

C projects:

Implementation of famous game Akinator. Console interface. Inner architecture is realized using binery tree.

Differentiator - implementation of differentiation machine using binary tree and recursive descent technology (elementary parcer)

Realisation of sequential container as list and visualisation it's working using GraphViz

Hashmap (aka copy std::map)

LFUDA - implementation of cache by LFUDA politics (combination of the best of LFU and LRU). Group project, in which I was engaged in testing, debugging and developing of inner components.

C++ projects:

LFUDA and Belady cache implementation. This task was intended to compare the execution speed of caches written in different languages: C and C++. Also, during this task, the Beladi algorithm was presented as a benchmark caching, in comparison with which the policy LFUDA gave good results.

RAII class of Matrices. In this case I implemented custom class of array (aka std::array) and matrix class was realised on this base.

SDL2 Tutorial, for which I understood the mechanics of this graphic library. With the help of SDL2 I developed the next game.

Backgammon - implementation of simple 2D game engine and respectively realization of famous game backgammon (aka Nardy). The internal implementation of the program was done on the basis of OOP. The algorithm for playing with a computer was developed on the basis of a finite state machine.

HW3D (Triangle collision detection and their visualisation using vulkan api). Group project, in which I was involved in developing the geometry primitives, the 2D intersection algorithm and debugging. During this project, I managed to create a program that can fairly quickly calculate the intersection of up to 1,000,000 triangles.

vulkan_dev - implementation of graphical engine using Vulkan Api by Khronos Group. The graphical engine was created on the basis of OOP and at the moment it is capable of processing millions of points with diffuse lighting and translucent textures at a stable fps value.