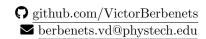
Victor Berbenets



EDUCATION

MIPT(Moscow Institute of Physics and Technology)

2022 - 2026

DREC(Department of Radio Engineering and Cybernetics)

Current GPA: 7.09/10

Coursework

Main Courses: Discrete Math, Linear Algebra, Calculus, Physics, Computer technologies, Uses and Applications of C++ (by K. I. Vladimirov), Compiler Technologies and Professional Programming (by I. R. Dedinsky)

Languages

- 1. Russian / Native.
- 2. English / B1-B2.

SKILLS

Programming Languages: C/C++, Python, x86 Assembler

Tools: CMake, Git/GitHub, Linux, Vim, gdb, valgrind, VS Code, Latex

Best Projects

Cache | C++, CMake, Bash

Aug. 2023

• LFU (least frequently used) cache implementation. My introduction to basic language concepts.

Triangles $\mid C++, Python, CMake, Gtest, Bash$

Sep. 2023

- Detecting intersecting triangles in 3D space.
- Building your own hierarchy of geometric figures: from points and segments to triangles and planes.

AVL Tree | C++, Graphviz, CMake, Gtest, Bash

Oct. 2023

- Implementation of an AVL-based search tree with lower-, upper-bound methods and iterators.
- The main task, besides creating a tree, is to write an effective distance method that works in O(log n).

Matrix | C++, CMake, Gtest, Bash

Oct. 2023

 Implementation of a matrix class with a contiguous iterator class and a method for calculating the determinant.

MatrixChain | C++, CMake, Gtest, Bash

Nov. 2023

- Efficient matrix chain multiplication.
- The program prints the optimal sequence of multiplying matrix pairs.

ParaCL $\mid C++$, Bison, Flex, CMake, Gtest, Bash

Dec. 2023 - Feb. 2024

- Custom C language (Interpreter). Frontend was implemented with Flex & Bison.
- A large project that helped to thoroughly study the basic principles of OOP.

Graph $\mid C++, CMake, Bash$

Feb. 2024 - Mar. 2024

- Donald Knuth's representation of a graph (TAOCP 7.1).
- The program checks the graph for bipartiteness: if the graph is bipartite, it displays its colored representation, otherwise it displays a cycle of odd length.

OfflineLCA | C++, CMake, Bash

Mar. 2024

• Solving RMQ problem in O(n) preprocessing and answering each query in O(1).

Differentiator | C, Graphviz, Latex, make

Mar. 2023 - Apr. 2023

• A program that calculates derivatives with respect to all variables and outputs it all to a pdf file.

 $\mathbf{CPU} \mid \mathit{C, make}$ Nov. 2022 - Jan. 2023

- Assembler: support for basic proprietary commands.
- Virtual processor: executes programs written on proprietary assembler.