ARTEM MAKLAKOV

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○ worthlane   in artemmaklakov

EDUCATION

Moscow Institute of Physics and Technology (MIPT, PhysTech)   2023 - Present

B.S. in Applied Mathematics and Computer Science, expected June 2027

- Cumulative GPA: 4.82/5.00

Moscow State School 57   2019 - 2023

Top-tier high school, specialized physics class

- Graduated with a gold medal

WORK EXPERIENCE

Huawei Technologies - Research & Development

Software Engineer Intern, DSP Compilers team   July 2025 - Present

- Implemented LLVM backend optimizations for a proprietary DSP (instruction selection, scheduling)

Software Engineer Intern (Summer), AI for Code team   August 2024

- Research on RAG's impact on code generation

AWARDS

All-Russian Olympiad of schoolchildren (Physics)   April 2022
The final stage prize-winner

International Experimental Physics Olympiad (IEPHO)   November 2019
Two times bronze medal   November 2020

Level I National Olympiads   2020-2023
Multiple winner in physics and mathematics

CERTIFICATION

IELTS Academic - Overall Band 8.0/9 (CEFR C1)   2025

SKILLS

- C/C++
- Python
- Concurrency
- Algorithms
- LLVM, MLIR
- Assembly x86 & ARM
- GDB
- LaTeX
- PyTorch
- NumPy, Matplotlib

EXTRACURRICULAR

- Mentor at the course of System Programming & Compiler Technologies
- Organized and proctored mathematics/physics olympiads for high-school students
- Volunteer at university events
- Hockey player

PROJECTS

Photo editor
December 2024

Tools: C/C++, SFML
- A photo editor with support for third-party plugins (made in accordance with the standard). Plugins are connected using dynamic linking.

LLVM Pass
April 2025

Tools: C/C++, Graphviz, LLVM
- During compilation stage generates a DOT graph of the instruction flow.
- Instruments the code with logging functions to collect dynamic runtime data, such as: execution results, instruction execution counts.

"57Lang" programming language with x86 compiler
December 2023 - May 2024

Tools: C/C++, ASM, Graphviz
- Esoteric programming language with three stages of code processing: Frontend generates AST-tree from code
- Middle-end optimizes AST-tree
- Backend translates AST-tree to intermediate representation, which is used by compiler for ELF-file generation

Algorithms and Data Structures
December 2024 - December 2025

Tools: C/C++, Python

Repository contains laboratory works and tasks on the following themes:
- Search data structures
- Range minimum query (RMQ), range sum query (RSQ)
- Dynamic programming
- Graphs: spanning trees, lowest common ancestor (LCA), paths
- Hashing algorithms
- Matchings, flows

Mandelbrot set generation
March 2024

Tools: C/C++, ASM, SFML
- Studying the speed impact of replacing usual instructions with SIMD.

Differentiator
November 2023

Tools: C/C++, Graphviz, LaTeX
- Program generates scientific work, that contains equations derivatives, simplifications, Taylor series and graphics. Result is a LaTeX document, that contains funny phrases and pseudoscientific nonsense.