



Valiev Ruzal

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📄 GitHub Profile

EDUCATION

• **Moscow Institute of Physics and Technology**

Present

BSc - Applied Mathematics and Physics 2nd year

GPA: 7.55/10

PERSONAL PROJECTS

• **CPU Emulator**

A program that simulates operation of a Turing-complete processor capable to execute programs written in its own assembly language. It contains registers, stack and RAM (also used as a video memory). Assembly language supports labels, procedures and all command set of virtual machine's CPU.

– Languages: C

• **Differentiator**

Project for differentiating expressions, plotting functions, tangents and taylor series graphs, generating taylor series. Generates comprehensive Latex output of all maths calculations, python graphics.

– Languages: C

• **RapLang**

RapLang is a Turing-complete language that translates code into my CPU's assembly source. Its frontend is based on works on recursive descent method.

– Languages: C

• **CrackMe**

A simple hack applied to CrackMe program using buffer overflow. The project has a simple GUI.

– Languages: C, Assembly x86

SKILLS

Programming languages: C, C++, Assembly x86, Python

Tools: Git, Latex, GraphViz, TxLib, Gdb, IDA, PyQt5, Turbo Debugger

Programming courses passed:

- Industrial programming and Compiler technics (1 semester).
- Computer architecture and Assembly languages (at the moment of CV writing passed 50%).
- Algorithms and Data Structures (1 semester).
- Python (2 semesters).
- C++ (1 semester).

Languages: Russian (native), English (B1), Tatar (native)

Soft skills: activity, curiosity, responsibility, desire to learn