

Ilya Belov

Physics &
Data Analytic

Ilya Belov
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Skills

Physics and computing student with a strong foundation in mathematics and scientific programming. I write and debug technical code in Python and C++. Which is a good fit for evaluating and improving AI-generated code and STEM content.

Programming: Python (NumPy, PyTorch, pandas, matplotlib), C++, (OpenCL, Eigen, CMake), SQL.

Domains: numerical methods, physics simulation, linear algebra, ODEs

Analytical: code review, debugging, algorithmic problem-solving, technical writing.

Learning: data analysis

Languages: Russian (native), English (C2 – near-native), German (A2 – learning)

Projects

N-Body Gravitational Simulator / Personal Project

2025 – PRESENT, REMOTE

Built a modular N-body simulator in Python with an entity-component architecture and interchangeable NumPy, PyTorch, and OpenCL backends; implemented a symplectic integrator and validated orbits against NASA/JPL SPICE ephemeris data. Ported the core to C++ (Eigen) and an Apple-GPU backend (MLX), reaching ~24M steps/second – about 200x the pure-Python loop.

Numerical Methods Library / Personal Project

2026 – PRESENT, REMOTE

Designing an open-source, backend-agnostic Python library of linear multistep ODE integrators (Adams-Bashforth / Adams-Moulton, BDF) targeting the Array API standard, with cached coefficient tables and convergence-order tests. Intended for release on PyPI.

Golf-Ball Flight Model / University Group Project

2026, UNIVERSITY OF ST ANDREWS

Modelled club-ball impact and aerodynamic flight (Magnus lift, drag) in Python; identified and corrected reference-frame and coefficient errors by validating output against published results in the physics literature. Implemented advanced model dependencies on experimental data.

Education

University of St Andrews / Master in Physics (Honours) Theoretical Physics

SEP 2025 – JUN 2030, ST ANDREWS, UK

School No. 179 Moscow / Secondary School Diploma

SEP 2021 – MAY 2024, MOSCOW, RUSSIA