



# ARTEM VERGAZOV

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🔗 ArtemVergazov

## SKILLS

C/C++

Python

MATLAB

PyTorch

PyQT

PySide

NumPy

SciPy

Pandas

scikit-learn

Matplotlib

Plotly

Folium

Dash

Flask

jinja2

PostgreSQL

Eigen

pytest

ML

DS

Numerical methods

Math modeling

Linux shell

WiX

LaTeX

## LANGUAGES

Russian: **Native**

English: **Advanced / C1**

## EXPERIENCE

### Contractor | [Aramco Innovations Moscow Research Center](#)

📅 Apr 2022 – u.t.d.

📍 Moscow, Russia

Development of AI-assisted water geochemistry prediction tool on Qt.

### Research Engineer | [Skoltech Laboratory of Quantum algorithms for machine learning and optimization](#)

📅 July 2023 – July 2024

📍 Moscow, Russia

- Implementing optimization algorithms
- Data automation for processing and experimentation
- Internal software development, debugging and testing
- Graphical processing of measurement results

### Industrial Internship | [Gazprom Neft's Science and Technology Center](#)

📅 June 2022 – August 2022

📍 Saint Petersburg, Russia

- Development of oil field optimization software for internal use.
- Implementing an optimization module based on Particle Swarm Optimization to the oil field modeling workflow.
- Achieved 3x speed up of the search for the optimal development system.
- 5% accuracy improvement due to improved boundary handling and hyperparameter selection.

### Intern | [Schlumberger Moscow Research \(SMR\)](#)

📅 Feb 2019 – Feb 2022

📍 Moscow, Russia

#### Project Involvements

- Development of competitive computational tools for hydraulic fracture simulation
- Development of elastically open fracture model for Kinetix simulator
- Development of Boundary Integral Equation Solver for non-local elasticity
- Higher-Order Approximation Displacement Discontinuity Method for improved accuracy in fracture width computation
- Development of computationally effective numerical schemes and algorithms for geomechanics models in MATLAB, C++, and Python
- Unit & system tests in Visual Studio C++ projects
- Code profiling for speedup using Intel VTune/Advisor
- Advising other team members on the theory of numerical methods and consulting on C++ software development techniques

### Achievements

- Development of the computationally effective method of high-resolution hydraulic fracture closure modeling
- Implementing highly accurate quadratic DDM
- Revision and speed up of existing model
- Presenting results of the work at company internal workshops
- Mentioning in the acknowledgements in the paper in Engineering Fracture Mechanics Magazine for contribution to elastically open fracture model development: <https://doi.org/10.1016/j.engfracmech.2020.107071>

## EDUCATION

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### MSc | [Skoltech](#)

📅 2021 – 2023

📍 Moscow, Russia

- Program: Advanced Computational Science
- GPA: 4.74/5.00
- Field of Research: Machine Learning and Data-Intensive Modeling
- Thesis: Articulation Points in Multiplex Networks
- Advisor: Vladimir Palyulin, Assistant Prof.

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### BSc | [Lomonosov Moscow State University](#)

📅 2017 – 2021

📍 Moscow, Russia

- Faculty of Physics, Department of Applied Mathematics, Chair of Mathematics
- GPA: 4.94/5.00 (**diploma with honors**)
- Field of Research: Numerical Methods and Mathematical Modeling
- Thesis: Accuracy Control in Stiff System Integration
- Coursework: “Tools for constructing artificial neural networks for classification problems in particle astrophysics” (at the Chair of Nuclear Physics and Quantum Collision Theory)

### Publications in Preprints of Keldysh Institute of Applied Mathematics

- Belov A.A., Vergazov A.S., Kalitkin N.N. Numerical solution error of stiff Cauchy problems on geometrically adaptive meshes // Preprints of Keldysh Institute of Applied Mathematics. 138 (2019), p. 23 DOI: 10.20948/prepr-2019-138
- Belov A.A., Vergazov A.S., Kalitkin N.N. Accuracy control in stiff system integration // Preprints of Keldysh Institute of Applied Mathematics. 2020. № 88, p. 27 DOI: 10.20948/prepr-2020-88

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- Russian Fund for Basic Research, project No. 18-01-00175
- the President grant MK-1780.2019.1

## OTHER

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### Holder of Moscow government scholarship **65K/year**

📅 2017 – 2021

📍 Moscow, Russia

for 100 score at Unified State Exams both in Physics and Mathematics