



# ARTEM VERGAZOV

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## SKILLS

C/C++

Python

MATLAB

VS/VS Code

Code::Blocks

PyCharm

Intel VTune/Advisor

TensorFlow

Keras

PyTorch

PyQT5

PySide6

NumPy

SciPy

Pandas

scikit-learn

Matplotlib

Plotly

Dash

Flask

Folium

Eigen

ML

DS

Analytics

Numerical Methods

Math Modeling

Hydraulic Fracture Modeling

## EXPERIENCE

### Intern | Aramco Innovations Moscow Research Center

📅 Apr 2022 – June 2023

📍 Moscow, Russia

Development of AI-assisted prediction tool for water geochemistry on Python using PySide6 for the GUI, xgboost for the ML model, Plotly for geomap plots and data visualization, Flask for the local map server.

### Industrial Immersion | 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.

### Product Analyst | Tinkoff Business Department

📅 Mar 2022 – Apr 2022

📍 Moscow, Russia

Small & Medium Enterprises Onboarding Team

### Intern | Schlumberger Moscow Research (SMR)

📅 Feb 2019 – Feb 2022

📍 Moscow, Russia

#### Project Involvements

- Development of competitive computational tools for hydraulic fracture simulation
- Hydraulic fracture closure on proppants for one of fracturing simulators in Kinetix
- 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 2 company internal workshops

## LANGUAGES

Russian: **Native**

English: **Advanced / C1**

- 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: B (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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- 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