Arseniy Obolenskiy

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LinkedIn GitHub

Profile

I am a software engineer working in compiler development industry. I have experience in C++ and Python programming, worked in projects related to media software stack and currently focused on working in compiler development and AI frameworks scope. Furthermore, I am participating in knowledge sharing activities, involved into teaching and mentoring. Also, I am fond of doing pet open source projects in my spare time on GitHub to learn some technologies besides professional job experience. I am looking for professional growth and strive to learn something new and develop skills.

Work Experience

01.2025 – present

AI Frameworks Engineer Munich, Bavaria, Germany

Intel Corporation

- Enabled acceleration of common LLM subgraph patterns on model compilation step, gaining performance for multiple model variants on both x86, ARM and RISC-V platforms
- Maintained RISC-V CPU inference component, drove collaboration activities for new outside contributors
- Led code-quality improvement initiatives by adopting clang-tidy static analysis across a large codebase, performing extensive code cleanup, and enforcing best practices reducing overall code review time
- Related open source repository: github.com/openvinotoolkit/openvino

09.2025 – present

Research Supervisor Remote (contract)

Nizhny Novgorod State University

Supervising student research and thesis projects

02.2024 – present

Lecturer Remote (contract)

Nizhny Novgorod State University

Working as a lecturer for several subjects: *Introduction to Compilers*, *Parallel Programming*, *Basics of AI accelerators programming.*

Introduction to Compilers

- Extended and updated materials for “Introduction to Compilers” course
- Delivered lectures on “Introduction to Compilers”
- Introduced short tests component for the lectures to measure subject understanding among the students
- Prepared an infrastructure for practical component of the course and participated in student laboratory assignments review
- Prepared publicly available course materials: github.com/NN-complr-tech/Complr-course-lectures

Parallel Programming

- Delivered practice oriented lectures as a part of “Parallel Programming” course
- Prepared publicly available course materials: github.com/learning-process/parallel_programming_slides

Basics of AI accelerators programming

- Implemented part of lectures about Ascend NPU from scratch
- Delivered lectures on “Basics of AI accelerators programming” about Ascend NPU

09.2023 – 12.2024

Senior Software Engineer Dongguan, Guangdong, China / Suzhou, Jiangsu, China

Huawei

- Worked on MLIR based solution for HW specific code optimizations for ML operators written for different ML frameworks, implementing and enabling source-to-source compiler based transformation

- Worked on binary profiling tool implementation using binary instrumentation technology on LLVM stack and custom written from scratch non-LLVM infrastructure
- Prototyped conversion tool for source-to-source transformation of OpenMP pragma directives using clang frontend capabilities
- Investigated different variation of compiler based source-to-source code transformations for conversion between different programming models
- Performed team research project deliverables' integration into headquarters product mainline, meeting and negotiating with headquarters team members; successfully integrated two projects developed by overseas team into the product mainline

09.2022 – 09.2023 **Software Engineer** Nizhny Novgorod, Russia

Huawei

- Worked on LLVM-based compiler for NPU
- Implemented whole compilation stack from FE programming model to backend code generation: clang, MLIR, LLVM, target specific assembly
- Implemented solution for source-to-source MLIR based code transformation for code conversion between different programming models (SIMT and SIMD)
- Implemented binary profiling tool using binary instrumentation technology on LLVM stack
- Was in charge of CI infrastructure for all projects in research team

12.2021 – 09.2022 **Compiler Engineer** Nizhny Novgorod, Russia

Intel Corporation

- Working on various features and fixing bugs reported by the community in DPC++ compiler
- Supporting SYCL device headers

08.2021 – 12.2021 **Graphics Software Engineer** Nizhny Novgorod, Russia

Intel Corporation

- Worked on a PoC of a new SDK for media stack related to screen sharing and broadcasting

12.2020 – 12.2022 **Laboratory Research Assistant (part-time)** Nizhny Novgorod, Russia

Nizhny Novgorod State University

- Worked on graph and ML algorithms application for solving biological problems
- Worked on researching OpenVINO neural network layers optimization for ARM CPU architecture

01.2020 – 08.2021 **Graphics Software Intern** Nizhny Novgorod, Russia

Intel Corporation

- Worked on various features and supported MediaSDK and oneVPL products for Intel GPUs
- Worked with customers and community
- Supported C++ validation framework
- Related open source repositories:
  - github.com/Intel-Media-SDK/MediaSDK
  - github.com/oneapi-src/oneVPL-intel-gpu

Volunteering

10.2021 – present **Mentor and Project Supervisor (ITLab)** Remote

Nizhny Novgorod State University

- Participate in the ITLab initiative and supervise voluntary IT classes and project-based work for Bachelor's degree students
- Mentor project teams of 2 – 6 students from topic definition to implementation and final project review
- Topics: 10.2025 – present (6 students): Android applications development with LLM workflows based on OpenVINO Java API and ARM CPU plugin
- Topics: 10.2025 – present (3 students): optimization of neural network layers for LLM tasks on embedded RISC-V architectures in OpenVINO Toolkit

- Topics: 10.2024 – present (4 students): neural network inference using ARM Compute Library and industrial software development
- Topics: 10.2023 – present (3 – 4 students): neural network inference framework implementation and industrial software development
- Topics: 10.2022 – 06.2023 (2 students): computer vision algorithms optimization on embedded devices
- Topics: 10.2021 – 06.2022 (2 students): neural networks optimization on ARM architecture
- Project materials and source code: github.com/embedded-dev-research

Education

10.2023 – 06.2026 **PhD Program, Computer Science and Informatics** Nizhny Novgorod, Russia

Nizhny Novgorod State University

PhD candidate: Coursework completed, ABD (all but dissertation)

09.2021 – 06.2023 **Master's degree with honors, Fundamental Informatics and IT** Nizhny Novgorod, Russia

Nizhny Novgorod State University

- Neural network optimization research on ARM architecture
- Was a mentor for a group of students in ITLab project
- Final qualification work: "Neural networks inference optimization on ARM architecture"

09.2017 – 06.2021 **Bachelor's degree with honors, Software Engineering** Nizhny Novgorod, Russia

Nizhny Novgorod State University

- Graph algorithms and data structures research; graph coarsening implementation; neural networks application to tasks related to graphs
- Participated in ITLab project
- Final qualification work: "Building graphs that are topologically similar to the original ones to improve the accuracy of machine learning algorithms"

Publications

02.01.2026 **Practical Aspects of Teaching Parallel Programming at the Lobachevsky University**

Springer, Supercomputing (RuSCDays 2025), LNCS vol. 16196

Language: English

DOI: `10.1007/978-3-032-13127-0_37`

19.11.2025 **Collaborative development of a library for convolutional neural networks inference**

Mathematical Modeling and Supercomputer Technologies Conference 2025

Language: Russian

Link: `mmst.unn.ru/wp-content/uploads/2025/12/MMST2025_Proceedings.pdf#page=152`

14.11.2022 **Neural network layers optimization on ARM architecture**

Mathematical Modeling and Supercomputer Technologies Conference 2022

Language: Russian

Link: `hpc-education.unn.ru/files/conference_hpc/2022/MMST2022_Proceedings.pdf#page=86`

22.11.2021 **Application of machine learning methods to determine the origin of people based on the results of a mutation in their DNA**

Mathematical Modeling and Supercomputer Technologies Conference 2021

Language: Russian

Link: `hpc-education.unn.ru/files/conference_hpc/2021/MMST2021_Proceedings.pdf#page=251`

21.09.2020 **Comparison of graph coarsening algorithms in parallel sparse matrix reordering task**

International Conference Russian Supercomputing Days 2020

Language: Russian

Link: `2020.russianscdays.org/files/2020/RuSCDays20_Proceedings.pdf#page=142`

Languages

English	upper intermediate (B2)
Russian	native
German	elementary (A2)
Mandarin Chinese	elementary (HSK 2)

Professional Skills

C/C++, Python, LLVM, MLIR, source-to-source transformations, code generation, performance optimization and profiling, static code analysis, CI/CD, AI frameworks (PyTorch, OpenVINO), LLM inference optimization, parallel programming (OpenMP, SYCL), CPU/NPU architecture-aware optimization (x86, ARM, RISC-V), binary instrumentation, Linux, Git, research project leadership, university lecturing and mentoring