Ivan Okhmatovskii

📞 +1(650)2838056   ✉ iokhmato@purdue.edu   📍 West Lafayette, IN   in okhmat   ⌗ okhmat

Objective

A performance- and quality-oriented researcher and developer in computational physics seeking a full-time R&D position in CEM.

Education

PhD **Purdue University**, Electrical and Computer Engineering — 2020 –
- *Research area:* Computational electromagnetics, differential geometry, discrete exterior calculus. — GPA 4.0/4.0

MSc **Skolkovo Institute of Science and Technology** (Skoltech ⧉), Computational Science and Engineering — 2017 – 2019
- *Research area:* Numerical Linear Algebra, Numerical PDEs, Optimization Methods, Molecular Dynamics. — GPA 3.3/4.0

BSc **Mocsow Instutute of Physics and Technology (MIPT)** (Phystech ⧉), Applied Physics and Mathematics, Department of Radio Engineering and Cybernetics. — 2013 – 2017
- *Coursework:* General Physics, Theoretical Physics, Math. Analysis, Numerical Methods, Operations Systems, Object Oriented Programming, Discrete Analysis, Probability Theory. — GPA 3.3/4.0

Experience

CEMWorks Inc., R&D Intern — MB, Canada — July 2018 – Nov. 2018 — 4 months
- Developed a prototype of ray-tracing based hybridized SBR solver to efficiently simulate 5G coverage in urban environment for reliable out-of-sight vehicle-to-vehicle communication.
- C++-based solver was parallelized using openMP which allowed large-scale simulations and helped to show that the coverage can be dramatically improved by strategically placing Frequency-Selective Engineering Surfaces (FSES) in the simulated setup.
- The results were visualized using Paraview and presented to the Canadian National Research Council as a part of a proposal and helped to secure $1.5M grant for the company.

Almaz-Antey Corporation, Engineer — Moscow, Russia — Jan. 2016 – July 2017 — 1 year 6 months
- Design and optimization of target tracking algorithms in C/C++ for parallelized (POSIX threads) secondary real-time radar data processing on Elbrus-90 micro SPARC multiprocessor system.
- Embedded a *(profiling)* system to visualize utilization of CPU time by a multi-threaded algorithm allowing for further elimination of bottlenecks in the implementation.

Lab. for Development of Complex Computer System Architectures (MIPT), Junior Software Developer — Moscow, Russia — Feb. 2016 – July 2017 — 1 year 5 months
- Worked with the software development team on implementing Python library replicating and extending Matlab's Radar System Design Toolbox; made contribution to implementing and extending functionality of matched filtering of secondary radar data.

Mentorship

Purdue University, Instructor — IN, USA — June 2023 – Aug. 2023 — 2 months
- Taught ECE30411 "Electromagnetics I" to undergraduate students over the summer with special emphasis on deep understanding of physical phenomena and problem solving.

Skills

Languages: C/C++, Python, CUDA, LaTeX

Frameworks/Packages: CLion, PyCharm, Paraview, Gmsh, Jupyter Notebook, Visual Studio Code

Dev Tools: Unix, Bash, Git, Valgrind, GDB, MPI, OpenMP, Pthreads