

Alexander Samoilov



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🌐 <https://github.com/alsam>

Education

'1982 – '1987 **Moscow State University, Department of Mathematics and Mechanics**, Moscow.
Chair specialization: Gas and Wave Dynamics.
Grades 95% Overall

Experience

December '14 – **Principal Engineer for Advanced Projects, Huawei Corp**
Present <http://www.huawei.com>, Moscow.
projects for Domain-Specific Languages for GPU programming based on:
Delite - <http://stanford-ppl.github.io/Delite>
Scalan - <https://github.com/scalan>

July 2010 – **Performance Architect, NVidia** <http://www.nvidia.com>, Moscow.

December '14
4.5 years Worked on performance simulators for future GPU architectures.
GPU architectures study and writing codes for simulating virtual memory – TLB cache study.
Performance study of High-Performance Computing applications for Computational Fluid Dynamics, Quantum Physics, Molecular Dynamics.

April 2007 – **Sr. Software Engineer, Cadence Design Systems**
June 2010 <http://www.cadence.com>, Moscow.
3 years, 3 months Support and development for Cadence products for Electronic Design Automation of VLSI.
Some projects:
QCAP support - Cadence product tool for RC parasitic extraction. Bug fixing and further development to support *FINFET* technology process.
SNASND acceleration - a tool for substrate noise analysis was accelerated in more than 50 times by improving algorithm for solving large sparse matrices. The result was reported on TECCI 2009 conference.
Electrostatic BEM/FEM field solvers - tuned SVD low-rank matrices approximation approach for achieving acceleration without loss of precision.

August 2003 – **Sr.CAD Engineer, Intel Corp.** <http://www.intel.com>, Moscow.
March 2007 Research worker for Strategic CAD Labs.
3.5 years Experimental flow for future processor design technologies.
Some of the projects:
Timing-Driven Routing - participated in the project led by Dr. Priyadarsan Patra.
Honored for the project.
Dynamic power estimation - proposed original approach using Bayesian Nets for estimating switching activity.

Skills

CPU and GPU Architecture deep knowledge of modern CPU architecture, especially NVidia GPUs, modern pipeline architectures, caches, TLBs

Algorithms: numeric and for discrete optimization mastered in modern algorithms including NP-hard, graduated from Coursera course for discrete optimization, have experience in implementing numerical algorithms for Computational Fluid Dynamics including porting to parallel architectures.

Programming Preferred: C, C++, Scala, Fortran, Bash, Python, Perl, **CUDA**, MPI

Exposure: Haskell, Rust

Tools Linux, Emacs, Eclipse, IntelliJ, Ant, Ivy, Maven, Autotools, CMake, Make, Git, Subversion, Perforce

Languages Russian (Native), English (fluent)

Interests

Books

Traveling