KIRILL LYKOV

TECHNICAL SKILLS

Excellent Computer Science and Math background
Current core language: C++; before Python, CUDA, Java, C#, Matlab
Experience with software development process (github, Jenkins, deployment procedures, Docker, various testing, etc)
In depth knowledge of C++ development tools (perf, valgrind, sanitizers, gtest, package managers, etc)
Able to plan, communicate, solve, and present complex problems

EXPERIENCE

Bloomberg LP, Switzerland 03/2018 - current
Senior Software Engineer

- Lead development of data processing service for efficient portfolio level computations (C++17, python, Apache Arrow, Docker). Migration of one of the core monolith services to micro-services architecture.
- Worked on the domain-specific languages interpreters to simplify financial computations (AntLR, C++, C++/python wrappers)
- Optimized performance of critical stack components (gbenchmark, perf)
- Co-founder of Arrow community within BBG, occasionally contribute to Apache Arrow
- Training instructor: google-benchmark and performance analysis, py-arrow

University of Italian Switzerland, Switzerland 10/2011 - 03/2018
Researcher

- Developed high performance software for blood flow modeling which ran on the biggest supercomputers available (C++, CUDA, MPI). Finalist of Gordon Bell'15 Award for outstanding peak performance.
- Developed new methods and models for numerical evaluation of the microfluidic devices for early cancer detection
- Published five papers in high impact journals / conference proceedings
- Simulation results analysis and visualization (Blender, Mitsuba, matplotlib)

Data East, Russia 11/2008 - 08/2011
Software Engineer

- Developed engine for full text and geo-spatial search (Java, Lucene, JavaScript)
- Designed and developed data access layers for GIS (C++, C#, WPF)

Ledas, Russia 07/2007 - 05/2008
Software Engineer

- Developed computational geometry algorithms for CAD systems (C++)
- Done a research in polygonal mesh construction and medial axis computation

EDUCATION

University of Italian Switzerland, Switzerland 10/2011 - 09/2017
Ph.D., Computational Science
Credits: Deep Learning, Computer Vision, Shape Analysis
Teaching: Linear Algebra, Advanced Programming and Design in Java

Novosibirsk State University, Russia 09/2004 - 06/2009
Diploma, Mathematics and Computer Science

PUBLICATIONS

1. D. Rossinelli, K. Lykov, et al. The In-Silico Lab-on-a-Chip: Petascale and High-Throughput Simulations of Microfluidics at Cell Resolution.Proc. SC'15, 2015.
2. K. Lykov, et al. Inflow/Outflow Boundary Conditions for Particle-Based Blood Flow Simulations: Application to Arterial Bifurcations and Trees. PLoS Comput Biol, 2015.
3. E. Peter, K. Lykov, et al. A polarizable coarse-grained protein model for dissipative particle dynamics. Phys. Chem. Chem. Phys., 2015.
4. K. Lykov, et al. Probing eukaryotic cell mechanics via mesoscopic simulations. PLoS Comput Biol, 2017.
5. K. Lykov, I. Pivkin. Computational Models of Eukaryotic Cells in Health and Disease. Handbook of Materials Modeling, 2018.