Sergey Kochuguev

Executive manager of research and development. Computer architecture and deep tech expert.

Saint Petersburg, Russian Federation

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Wechat (微信)

Brings together a combination of computer science and fundamental math expertise with business development experience to drive technology companies' research and development divisions in the global environment.

Certified expert in innovation management, leading business expansion in Russia/CIS.

Has multiple publications and a patent in the field of computer microarchitecture and computational mathematics.

Experience

Research Planning Expert, BD advisor

Huawei
Expert and Advisory
July 2019 – Sep 2024 | Saint-Petersburg/Moscow/Nizhny Novgorod

Served as **technology planning expert** for Huawei Central Research Institute, Huawei Institute of Strategic Research, and Huawei HiSilicon microelectronics foundry. The team of the world's best professionals scouted, assessed, and developed technological breakthrough ideas from a basic principles observation to a system prototype validation (TRL levels 1 to 6).

The primary focus was on the following topics:

- Breakthrough ideas in Fundamental Math, Computing, and Algorithms for redefining and optimizing the **computing fabric** of a future **AI**.
- Advanced computing architecture, microarchitecture, and hybrid compiler for server, mobile, and special purpose NPU/CPU/GPU.

- Application of 4th generation semiconductor materials in power electronics, optics, and sensing for next-gen computing, communication, and human-machine interface (HMI).

Received Huawei “Future Star” Award in 2020 for the bringing up of academia and industrial partnerships during the crisis response phase of 2019-2020. Ensured a stable pipeline of talent and team acquisitions. Managed university partnerships and city government relations for Mendeleev Hall academic conference center.

Managing director

Datagrav ltd.

Executive

Mar 2011 – 2019 | Saint-Petersburg/Moscow

Founder and general manager of the information technology company.

- Designed and developed the family of SaaS/on-premise software products (document/knowledge/collaboration management platforms).
- Managed product development (including engineering leadership) driven by sales and customer development feedback loops.
- Project and people management with on-site and remote teams. Staffed and managed 50+ people in three locations - St.Petersburg, Moscow, Minsk.
- Managed strategic plans and expectations, Board and Investor relations, including budgeting and financial planning.
- Built international customer base in Europe (Netherlands), Africa (Nigeria), Middle East (Algeria). Created sales channel via the subsidiary company in Nigeria - Datagrav West Africa Nigeria Ltd.
- Established and maintained relationships with the government of Russia, federal agencies and officials (GR).
- Represents the company at the academic conferences, public events and VC meetings.

Successful exit deal in July 2018 - now a minority (16%) shareholder.

Chair of the Board / Advisor

Intexpertise ltd.

Executive / Advisory

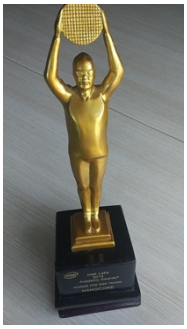
Jan 2017 – Present | Saint-Petersburg/Moscow

Serves in the executive and advisory roles in Russian think tank focusing on data analysis and research for the international markets.

Incepted the “Russia-Africa Shared Vision 2030” report and coordinated GR activities.

Research scientist, team lead

[Intel Labs]
Lead
Nov 2010 – May 2014 | Saint-Petersburg , Russian Federation



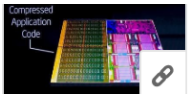
Received Intel Labs' Gordon Moore “Gordie” award for risk-taking in research projects (2012).

Worked on innovative research and development in the following areas:

- Ultra-Low Power SoC design and instruction set definition
- Performance, power modelling, analysis and optimization
- Workload characterization
- Reinventing wireless and LTE HW/SW in agile teams.

As a compiler expert researched and coordinated projects on code generation for configurable targets and hardware-software co-generation for an ultra-low power SoC IP. Established testing and verification methodology, developed massive scale CI harness (single Jenkins control node spawning 10000+ jobs on the Intel's massive “NetBatch” simulation farm).

Coordinated projects on code compression, worked with community and press.



Intel demos real-time code compression f...

Holds a patent in the field of computer microarchitecture.

Compiler developer

[Pathscale]
Individual Contributor
Jan 2010 – Nov 2010 | Remote

Back-end engineer. Mostly contributed to code generation, inter-procedural analysis and whole program optimization.

Technology stack: C/C++, MacOS/Linux, LLVM/Open64, complex commercial compiler standard compliance test suites.

Principal Engineer

RingCentral
Individual Contributor
Feb 2009 – Jan 2010 | Saint-Petersburg , Russian Federation

As an individual contributor, worked on a voice quality/VoIP stack for RingCentral's iPhone and PC apps.

Technology stack: C/C++/Objective C on embedded, Windows and MacOS/Linux.

Compiler Developer

Sun Microsystems
Individual Contributor
Jan 2004 – Jan 2009 | Saint-Petersburg , Russian Federation

Software engineer in Sun Compiler team. Mostly contributed to x86 and x64 code generation in the most complex requirements and QA environment. Technology stack: C/C++/Fortran/scripting, compiler frameworks (Sun Studio, Open64, LLVM).

Co-authored and presented a technical demo of DTrace/Sun Studio Debugger during Sun Tech Days'08 in Johannesburg, South Africa - on-stage event.

Participated in a technical community relation program, evangelized Sun Micro's technology in Russian universities.

Software Engineer, Mathematician

Semiconductor Technology Research Inc./Softimpact Ltd.
Individual Contributor
Jan 1998 – Aug 2004 | Saint-Petersburg , Russian Federation

Designed and implemented mathematical methods in commercial numerical simulation software.

- Team lead in *"Virtual Reactor"* radiative heat transfer simulator project.
- Designed and implemented various numerical methods in large commercial crystal growth simulation software.
- Developed a workload balancer for the cluster architecture computational fluid dynamics solver.
- Co-authored 12 papers in international peer-reviewed journals, participated in 2 international conferences on applied math.

Education

Saint-Petersburg State University

Mathematician (with distinction)
1996 – 2001 | Saint-Petersburg , Russian Federation

Diploma with distinction in Mathematical Physics.

Certifications

Test of English for International Communication (TOEIC)
2005

Rated 965 of 990.

Publications

S. Kochuguev and A. Maslov.
Datagrav: a Framework for Knowledge Sharing using transclusion Enabled Collaboration Media.
ECIS 2016. https://aisel.aisnet.org/ecis2016_rp/18

Encoding To Increase Instruction Set Density.
US and international patent PCT/US2011/068020. Publication Date:04.07.2013.
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Journal of Crystal Growth 225 (2001) 307-311.

S. Kochuguev, D. Ofengeim, A. Zhmakin and A. Galyukov.
Ray Tracing Method for Axisymmetrical Global Heat Transfer Simulation.
CFD Journal II-33 (2001) 440.

В.М. Бабич, С.К. Кочугуев
О методе В.И.Смирнова – С.Л.Соболева явного решения задач математической теории дифракции.
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S.K.Kochuguev, E.I.Levin, A.I.Zhmakin.
Load balancing for steady computations using adaptive unstructured grids.
11 Int. Conf. Domain Decomp.Methods, Greenwich, 1998, Abstracts.

S.K.Kochuguev, D.Kh.Ofengeim, A.I.Zhmakin.
Multigrid methods for low Mach number viscous flow on adaptive unstructured grids.
10 GAMM Workshop on Multigrids methods, Bonn, 1998, Abstracts, 44-45.

S.K.Kochuguev, D.Kh.Ofengeim, and A.I.Zhmakin.
Application of a ray tracing method for global heat transfer simulation in axisymmetrical growth reactors.
The Third European Conference on Numerical Mathematics and Advanced Applications, Book of Abstracts, (1999) 101-102.

D.Kh.Ofengeim, S.K.Kochuguev, and A.I.Zhmakin.
Multigrid method for low Mach viscous flows on adaptive unstructured grids.
The Third European Conference on Numerical Mathematics and Advanced Applications, Book of Abstracts, (1999) 120-121.

S.K. Kochuguev, D.Kh. Ofengeim, A.I. Zhmakin.
Adaptive multigrid methods for crystal growth problems on unstructured grids.
16th IMACS World Congress, Lausanne, Aug. 21-25, 2000, CD-ROM Proceedings.

S.K. Kochuguev, D.Kh. Ofengeim, A.I. Zhmakin.
Adaptive methods for crystal growth problems on unstructured/hybrid grids.
Workshop on Comp. Meth. for Multidimensional Reactive Flows, Heidelberg, Sept. 25-27, 2000, Abstracts.

M.V. Bogdanov, A.O. Galyukov, S.Yu. Karpov, A.V, Kulik, S.K. Kochuguev, D.Kh. Ofengeim, A.V. Tsirulnikov, I.A. Zhmakin, A.E. Komissarov, O.V. Bord, M.S. Ramm, A.I. Zhmakin, Yu.N. Makarov.
Virtual reactor: a new tool for SiC bulk crystal growth study and optimization.
Mat. Sci. Forum, 353-356 (2001) 57-60.

A.V. Kulik, S.E. Demina, S.K. Kochuguev, D.Kh. Ofengeim, S.Yu. Karpov, A.N. Vorob'ev, M.V. Bogdanov, M.S. Ramm, A.I. Zhmakin, A.A. Alonso, S.G. Gurevich, Yu.N. Makarov.
Inverse-computation design of a SiC bulk crystal growth system.
Mat. Res. Soc. Proc. 640 (2001) H1.6.1-H1.6.6.