Sergey Kazenyuk

✉ kazenyuk@gmail.com
⌂ kazenyuk.com
linkedin.com/in/sergeykazenyuk
github.com/nvmd

Professional Experience

2018–Present **Co-founder, Managing Partner**, *ModusPonens*, Tallinn, Estonia.
Developing and advocating mass adoption of breakthrough technologies — future drivers of the technological singularity in the fields of software development, autonomous multi-agent systems and robotics.
One of the notable projects is Pruvendo — an approach and tooling for software development, formal verification and engineering processes, to increase the quality of the products and simplify customer-developer relations through uberization innovative for the field.
Technology stack: Haskell, Coq

2015–Present **Co-founder, CTO, System Architect**, *Pruvendo*, Saint Petersburg, Russia.
Developing an ecosystem of products for certified programming & software formal verification, having decentralized blockchain-based storage of the automatically-verifiably correct code (BitFunctor), and interactive development environment employing special-purpose AI in its core. One of the primary focus areas is FinTech with field-specific tooling (FinProof).
Technology stack: Haskell, Ethereum Solidity, Coq, Agda

2015–2018 **Computer Science Researcher / Software Research Engineer**, *Internet Of Coins*.
Internet Of Coins project is a meta-protocol and digital currency integration solution. Consultancy and development of the special-purpose blockchain subsystem, deterministic client wallet functionality, and system as a whole.
Technology stack: C++, JavaScript

2015–2016 **Founder, CEO**, *Stealth blockchain technology startup*.
Blockchain technology platform company, working on enabling easy cross-chain operations between Ethereum and CryptoNote platform networks, thus combining strong CryptoNote's privacy guarantees with Ethereum's flexibility and smart-contract functionality.
Technology stack: Erlang, Haskell, C++, Ethereum, Monero/CryptoNote

2014–Present **Software Research Engineer / System Architect**, *Freelance*.
System architect and/or Core developer for several blockchain, cryptocurrency, and FinTech related projects:
- Undisclosed cryptocurrency project. Core backend software. Released Alpha and Beta version as a single core developer.
- Undisclosed blockchain starup. Released MVP of a cryptocurrency REST API service leading the team of 3 developers.
- Decentralized system for verifiable/auditable computation and interaction of trustless agents. Designed high and API-level system architecture, was responsible for development roadmap and planning
Open source blockchain and cryptocurrency contributions:
- Bitcoin (on the official list of 0.9.0 release contributors)
- Monero. CryptoNote-based cryptocurrency providing full transaction anonymity.
- hs-cryptonote. Independent Haskell reimplementation of the CryptoNote protocol
Technology stack: C++, Java, Haskell, Blockchain, Bitcoin, Monero, CryptoNote

2014–2015 **Visiting Researcher**, *Institute of Cybernetics at Tallinn University of Technology*, Tallinn, Estonia.
Logic and Semantics Group collaboration: Formalization and verification of memory fencing in x86-TSO weak memory model using Agda (dependently-typed programming language and proof assistant).
Technology stack: Agda, Haskell

2013–2014 **Software Engineer**, *Undisclosed Software Research & Development Company*.
High-load financial service backend and tools design and development on the bleeding edge of finances, cryptography, distributed and blockchain/cryptocurrency systems. Successfully released two proprietary projects as a core backend developer. Consulted developers of the related projects on the underlying area fundamentals.
Technology stack: C++, boost.asio, Blockchain

2013–2013 **Software Engineer**, *EXANTE*, Saint Petersburg, Russia.
Trading system backend development: internal database services with REST API/JSON interface, authentication/permissions database client for Erlang-based software.
Technology stack: Erlang

2011–2013 **Visiting Researcher**, *Frankfurt Institute for Advanced Studies*, Frankfurt am Main, Germany.
Development of the MBN Explorer molecular dynamics simulation software: computational methods, performance optimization:
○ Particle-Mesh Ewald method for computation of the coulomb interaction energy and forces of the system of particles (with periodic boundary conditions), used by the Meso-Bio-Nano Science group to model, primarily, DNA damage process. Results were submitted to Nano-IBCT conference as [3]
○ Compound manybody potentials and Finnis-Sinclair potential for Nickel-Titanium clusters simulation
○ DCD and hybrid output file format writers. Usage of the DCD format for simulation output reduces time spent by the MBNExplorer writing results to disk by $\sim$70%.
Technology stack: C++, OpenMP, Mathematica

2010–2011 **Intern Technical**, *Intel*, Nizhny Novgorod, Russia.
AVX Pathfinding SPEC benchmarking for (then) upcoming Intel manycore (MIC) architecture (now known as Intel Xeon Phi) on FreeBSD (the only officially supported platform of the Intel MIC compiler at the time). Reimplemented AVX SIMD high-performance compiler intrinsics arithmetic coder.
Computational Photography Implemented test system for computational photography project, including host and device components. Developed FCamera-based Multifocus demo application for MeeGo smartphone operating system.
Android Codecs Build & test system implementation for Android X86 Intel-optimized libstagefright codecs. One of the two engineers preparing the (successfully released) beta version of the codecs in the summer 2011.
Low-overhead-collectors Program call-tree comparison as a validation technique for heuristics-based call tree generation algorithm of Intel VTune Amplifier:
○ Developed Pintool-based instrumentation tool for application call tree generation,
○ Developed an automated call tree comparison tool developed to be used for quality validation of sampling-generated call tree (against the call-tree, generated by the aforementioned tool).
Technology stack: C++, Python, Android, pintool

2008–2010 **Software Designer / Ericsson contractor**, *MERA Networks*, Nizhny Novgorod, Russia.
Ericsson Connectivity Packet Platform (CPP/Cello) telecommunication platform internal data-transport subsystem development and maintenance:
○ In-depth research of inner works of the real-time ENEA OSE operating system kernel and cross-team communication to identify and fix low-level problems closely related to the kernel,
○ Maintenance activities, mainly in the area of system programming in the ENEA OSE operating system,
○ Pre-delivery functional and regression testing in both emulated and "real HW node" environment.
Technology stack: C, PowerPC Assembly, ENEA OSE

Achievements, Conferences, Schools

2020 **"Mind/Thinking Network Marathon" Team Championship**, *MindClubs*, Online.
Award 1st|2nd place, "Think Factory" team

2019–2020 **"Multidimensional thinking in AI-era" course**, *MindClubs*, Saint Petersburg, Russia.
Organizer Team mentor. Educational course contributor

2019 **Island 10–22**, *Skoltech, ASI, 2035 University, NTI Platform, MindClubs*, Moscow, Russia.
Speaker Practical problem solving laboratory

2018–Present **MindClubs Member**, *ASI, 2035 University, NTI Platform*, Saint Petersburg, Russia.
https://mindclubs.com/

2017	**Social Engineer School on Futures Studies**, *North-West Institute of Management, RANEPA*, Saint Petersburg, Russia.
	`http://www.social-engineer.school/events/utopia_or_dystopia`
Award	"Beyond the singularity" educational quest winner
2016	**FinTech Lab 2016**, *Bankir.Ru*, Moscow, Russia.
Award	3rd place at Startup Contest with FinProof project
2016	**1st St.Petersburg Cryptography Meetup**, Saint Petersburg, Russia.
Speaker	"A better privacy on the blockchain. A quick ~~practical~~ overview" talk
2015	**"Blockchain.Fintech" Hackathon**, *HSE.Lab, Higher School of Economics*, Moscow, Russia.
Award	Blockchain hackathon winner with BitFunctor project
2013–2015	**18th–20th Estonian Winter School in Computer Science (EWSCS)**, Palmse, Estonia.
	`http://cs.ioc.ee/ewscs`

Education

2011–2014	**Master of Science**, *St. Petersburg Academic University of the Russian Academy of Sciences*, St. Petersburg, Russia.
	Department of Mathematics and Information Technology
Thesis Title	Pattern Matching in a Dependently Typed Programming Languages (undefended)
2007–2011	**Bachelor of Science in Information Technology**, *Nizhny Novgorod State University*, Nizhny Novgorod, Russia.
	Faculty of Computational Mathematics and Cybernetics, Information Technologies Laboratory (ITLab)
Thesis Title	Software optimization based on low-level program runtime information[1]

Courses and Certifications

DOSE2010	ETH Zürich Distributed and Outsourced Software Engineering	*by Peter Kolb and Bertrand Meyer*
DOSE2009	ETH Zürich Distributed and Outsourced Software Engineering	*by Peter Kolb and Bertrand Meyer*

Languages

English	Advanced
Russian	Native
German	A1

Publications

[1] S. S. Kazenyuk, A. A. Sidnev, and M. K. Turaev. A CPU emulator development for application performance analysis. In V. Gergel, editor, *Microsoft technologies in theory and programming practice: Conference proceedings*, pages 178–182, Nizhny Novgorod, May 2010. Press of Nizhny Novgorod State University. ISBN 978-5-91326-152-6 (Rus).

[2] I. A. Solov'yov, G. Sushko, A. V. Yakubovich, P. V. Nikolaev, I. Volkovetz, V. Korol, V. Dick, S. Kazenyuk, M. Panshenskov, and A. V. Solov'yov. *MBN Explorer Users' Guide (Version 2.0; July 29, 2016)*. MBN Research Center, Frankfurt am Main, July 2016.

[3] G. B. Sushko, M. A. Panshenskov, S. S. Kazenyuk, A. V. Yakubovich, I. A. Solov'yov, and A. V. Solov'yov. Studying DNA damage and nanofragmentation processes with MBN Explorer. In *European Physical Journal D (EPJD)*, 2014. (submitted to Nano-IBCT-2013, to appear).