Nikolay Kurtov

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Experience

Tech Lead - Node Team - NEAR Protocol July 2021 - Present

- Re-designed and implemented the new State Sync: https://gov.near.org/t/protocol-reinventing-state-sync/34567
- Made releases smoother: fewer incidents and better experience for the community
- Dramatically improved monitoring of the nodes: metrics, logs, tracing information (Grafana Tempo), monitoring of community nodes (needs opt-in)
- Communicated with the community validators over multiple channels
- For code contributions see https://github.com/nikurt

Tech Lead of YouTube Core SRE at Google 2018 - 2021

Improved reliability and efficiency of `youtube.com` by:

- Driving end-to-end success metrics up
- Developing a dependency management framework for C++ micro-services
- Getting new services production-ready and onboarding them to SRE

Knowledge Graph infrastructure at Google 2016 - 2018
Developed a new critical piece of infrastructure, improving reliability and throughput of the system. Designed and developed multiple components of the system, APIs for other teams.

Knowledge Graph quality at Google 2015
Improved Machine learning models reconciling music entities, affecting 0.3% of all web search traffic.

Geo logs processing at Google 2014
Extracted new metrics from usage logs and made them easily accessible to developers.

Geo data quality at Google 2013
Designed and implemented a high-precision machine learning system, removed duplicate business listings from the map of Russia.

Google Offers 2011 - 2012
Developed a system for personalized offers targeting both for email distribution and online distribution.

Software Engineer at Intel 2010 - 2011
Optimized Intel C++ Compiler for benchmarks CPU2000 and EEMBC1.1 on Atom

Intern Software Engineer at Intel 2008 - 2010
Developed distributed memory runtime for Intel Concurrent Collections for C++.

Intel Student Laboratory 2008
Added support for edge profiling in Apache Harmony Jitrino.JET compiler.

xored software 2007
Quality Assurance, Webmaster, managed Continuous Integration and administered Debian servers.

SWSoft Student Laboratory 2006
Developed a 3D-physics engine for one game, and level generation and sound programming for another game.

Skills

- 2 years of experience with Rust
- 14 years of experience with C++
- 3 years of experience with Python
- 1 year of experience with Go and Java
- Fluency in Haskell and Java
- Understand how some Blockchains work
- Software reliability engineering
- Large-scale systems design
- Data structures, algorithms and complexity analysis
- Shared and distributed memory parallel programming
- Optimization for Intel microarchitecture

Open-source projects

- **Hive Qt** - a desktop client for playing Hive, written in C++. https://bitbucket.org/orfest/hive_qt/src
- **AppleSID** - tracks signal amplitude of VLF radio stations to detect Solar Flares. Written in Rust. https://nest.pijul.com/orfest/applesid
- **TwilightAlign** - simple Rust tool for aligning Sun images. https://nest.pijul.com/orfest/twilightalign
- **Hive Web** - Web client for playing Hive, written in Haskell. https://hub.darcs.net/orfest/hiveweb
- **OnlineJudge CLI** - a set of Python tools for command-line access to online judge systems: UVa, Timus, Codeforces. https://bitbucket.org/orfest/onlinejudge-cli/
- **TSP Flaming** - solution of the travelling salesman problem using the Simulated Annealing method. http://tspflaming.sourceforge.net

Education

MS in Computer Science, 2009 - 2011

[Novosibirsk State University](). GPA 5.00 (100%)

BS in Computer Science, 2005 - 2009
[Novosibirsk State University](). GPA 5.00 (100%)

Hobbies

- Swordfighting (HEMA). Won a cup and a 2nd place medal. Give saber fencing lessons. Entertained crowds by swordfighting.
- Running, Marathon personal best time - 3h25m
- Climbing, Bouldering
- Astronomy. [Built a solar projection telescope]()

Programming Competitions

1. 14th place at the ACM ICPC World Finals 2010 in Harbin
2. 27th place at the ACM ICPC World Finals 2011 in Orlando
3. 11th place at the Yandex Open 2010 onsite round