

Sergey Melnychuk

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Summary

Experienced and skilled software engineer, passionate about software architecture, domain-driven design, functional programming, large-scale distributed systems and machine learning, constantly pursuing self-improvement both personal and professional.

Skills

Design, Implementation & Debugging of Large-Scale Distributed Systems
Advanced Data Structures and Algorithms, Performance Analysis & Optimisation
Problem Solving, Design Thinking, Technical Leadership, Team Leadership

Rust, Scala, Java, C++, C, Go, Python, JavaScript
SQL, NoSQL, Cassandra, PostgreSQL, Spark, Kafka
AWS, GCP, Docker, Kubernetes, Ansible, Jenkins

Experience

09.2022 - Present: Eiger (Software Engineer / Contract)

Core Engineer @ Beerus: light client for Starknet (Rust, WebAssembly)

<https://github.com/eigerco/beerus>, <https://github.com/sergey-melnichuk/iamgroot>

- Take over the project and resolve technical and architecture debts (significant rewrite)
- Design and implement spec-based RPC client & server code generation (iamgroot)
- Design and deliver seamless and effortless RPC spec upgrades using codegen tool
- Ensure project quality through CI, refactoring and improved functional tests coverage
- Design and implement core feature of the product: “stateless execution” of contracts
- Deliver WebAssembly library with light client functionality and deploy a [demo page](#)
- Technical leadership of a team of software engineers, communication to stakeholders
- Design, implement, test & deploy smart-contracts on Ethereum (hardhat, JS, Solidity)
- Basic UI/UX design and implementation using “vanilla” JS and React / Vue / Svelte

Maintainer @ Pathfinder: full node for Starknet (Rust, OpenRPC, SQLite)

<https://github.com/eqlabs/pathfinder>, <https://github.com/sergey-melnichuk/armada>

- Design and implement RPC methods according to the Starknet OpenRPC spec
- Design and implement alternative syncing engine and data storage & indexing
- Deliver PoC of a fast, parallel and rebase-friendly block syncing implementation
- Participate in regression analysis, issues triage and code-review of pull-requests

04.2022 - 09.2022: Meta (Facebook) (Software Engineer / L5)

Service Health (C++, Python, JavaScript, React, Rust)

06.2021 - 03.2022: Starburst Data (Software Engineer)

Trino (<https://github.com/trinodb/trino>) (Java, Maven, GitHub)

11.2019 - 06.2021: Equinix (Staff Software Engineer)

Big Data Analytics, Internet of Things (Java, Scala, Akka, Kafka, Spark, AWS)

07.2018 - 10.2019: Google (Software Development Engineer / L4)

Autopilot: vertical & horizontal auto-scaler & resource manager (C++)

<https://research.google/pubs/autopilot-workload-autoscaling-at-google-scale/>

SaaS-accelerator: GCP service for managing SaaS deployments (Go, GCP)

07.2014 - 07.2018: StrikeAd (acq. by Sizmek) (Senior Scala Developer)

RTB DSP development: high-load, big-data (Erlang, Scala, Python, AWS)

Leading a cross-functional feature-team of up to 6 software engineers.

06.2013 - 06.2014: EPAM Systems (Senior Java Developer)**09.2012 - 06.2013: EngagePoint (Java Developer)****05.2011 - 09.2012: Infopulse (Java Developer)****02.2010 - 05.2011: Infopulse (Junior Java Developer)****Education****2010 - 2012: Master's Degree, Computer Science****2006 - 2010: Bachelor's Degree, Computer Science**

NTUU "Kyiv Polytechnic Institute", IASA, System Design

Certifications

Cardano Blockchain Certified Associate (Cardano Academy, 2024)

zkSync zkEVM Bootcamp [Rust, Zero-Knowledge Proofs] (Encode Club, 2024)

Polkadot Blockchain Developer Bootcamp [Substrate, Rust] (Udemy, 2023)

Architecting with Google Kubernetes Engine (Google, 2022)

Reactive Architecture [6 courses] (Lightbend, 2021)

Functional Programming with Haskell (Spetic, 2020)

Apache Cassandra 3.x Developer Associate (Datastax, 2020)

Algorithms [by Robert Sedgewick] (2 parts, Princeton/Coursera, 2018)

Deep Learning Specialization [by Andrew Ng] (Coursera, 2018)

Functional Programming in Scala Specialization (EPFL/Coursera, 2018)

Oracle Certified Professional: Java SE 6 Programmer (Oracle, 2011)

Languages

English (fluent)

Polish (fluent)

Spanish (beginner)

Ukrainian (native)

Extra

TreeMap impl based on AVL-tree: <https://github.com/near/near-sdk-rs/pull/154>

Yet Another Key-Value DataBase: <https://github.com/sergey-melnichuk/yakvdb>

My tiny contribution to rust-lang: <https://github.com/rust-lang/rust/pull/72206>

Advent of Code solutions (full 50-star ones): [2020](#), [2021](#), [2022](#)