

Cherniavsky Kirill

SOFTWARE ENGINEER · GO · HIGHLOAD · DISTRIBUTED SYSTEMS

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Summary

A seasoned Software Engineer with over a decade of experience in developing robust software solutions. Specialized in software architecture, distributed systems, and micro-services with a deep understanding of various programming languages and technologies. Proven track record in leading tech teams and delivering innovative software projects. Actively engaged in the open-source community, contributing to significant projects and sharing knowledge through public speaking. Passionate about leveraging technology to solve complex problems and create impactful software products.

Work Experience

Quantum Brains

Remote

SENIOR ENGINEER / TECHNICAL LEAD

Mar. 2022 - Sep. 2023

- Led the development and maintenance of multiple services within a complex cryptocurrency DeFi trading infrastructure.
- Engineered a critical **low-latency Go** service to create a local copy of Aave v2 and v3's internal state. This involved processing blockchain events, extracting relevant data, and building the state for liquidation call profit decisions.
- Developed an execution service in **Go**, responsible for receiving liquidation decisions, calculating profit, and swiftly submitting transactions to the blockchain.
- Maintained simple **Solidity** helper contracts to support the execution service.
- Maintained a customized version of geth to extract transactions and their events from the mempool for the processor service.
- Created an analytics service that analyzed transactions, extracted key data, and stored it in a **ClickHouse** database.
- Managed data exchange between services using both direct **TCP** connections, **REST** API and **Kafka** queues.

HUBUC

Barcelona, Spain

BACK-END SENIOR ENGINEER (REMOTE CONTRACTOR)

Jun. 2022 - Jun. 2023

- Integral member of the team responsible for creating a **Mastercard** issuer processor using **Go**.
- Specialized in handling authorization, reversals, and refund transactions.
- Developed and maintained multiple microservices interconnected via **RabbitMQ**, ensuring robust message handling and processing.
- Managed endpoint services that communicated with Mastercard using a custom protocol over **TCP** connections.
- A key challenge was adhering to Mastercard's strict response time limits for transactions; failure to respond within these limits would result in transaction cancellations. Ensured system **reliability** and efficiency to meet these critical operational requirements.
- Developed **REST** API and **gRPC** services for transactions data access.
- Designed and implemented **PostgreSQL** database schemas and complex queries to get and calculate cards amounts

Huawei R&D Laboratory / Huawei Cloud department

Moscow, Russia

PRINCIPAL ENGINEER, TEAM LEAD

Jan. 2020 - Feb. 2022

- Led two simultaneous projects, managing teams of 5 and 3 developers, respectively. Coordinated with headquarters to discuss requirements, conducted extensive research, and proposed innovative solutions.
- **CloudArtifact** — Oversaw the creation of **Java** components for the CloudArtifact project, handling multiple software artifacts like RPM, NPM, Maven, pip, and Docker images; Ensured these components were optimized for high-load environments, supporting hundreds of thousands of downloads per minute.
- **Git Repository Replication System** — Innovated a replication system with strong consistency for **Git** repository storage; Pioneered the implementation of the **Paxos-commit** protocol for repository update replication, achieving redundancy across at least 3 servers; Developed a **Go**-based solution, integrated into the CodeHub cloud service, managing thousands of push operations and millions of pull operations per minute, across millions of repositories and thousands of geo-distributed virtual machines.

Freelance Experience

Remote

SELF EMPLOYED

Jan. 2018 - Dec. 2020

- **Cryptocurrency Exchange Platform Team Lead** — Led a remote team of 5 freelancers across different time zones; Managed project asynchronously, liaising with the CEO for requirement discussions and task creation; Made key architectural decisions and contributed to **Go** microservices development; Note: The project was discontinued due to funding issues.
- **Single Developer for High-Load Advertisement Tracker Service** — Engineered a **Go**-based service handling approximately 2 million requests per minute; Focused solely on developing the server part of a complex advertisement infrastructure.
- **Remote Developer for US-Based Healthcare Startup** — Implemented various **Java**-based features including **web scrapers** and data analyzers for a healthcare user service.
- **Single Developer for Data Pipeline and Crawler Project** — Developed a comprehensive data pipeline and crawler for California restaurant websites using **Java**, **Hadoop**, and **Nutch**; Managed the operation across about 100 virtual machines, processing millions of web pages; Extracted and analyzed restaurant menus, integrating them into **HDFS** and coordinating with Amazon Mechanical Turk for manual analysis; The project was part of a larger healthcare initiative.

Eventicios LLC

Samara, Russia

SENIOR DEVELOPER

Jan. 2015 - Dec. 2017

- As a Senior Developer, I played a key role in implementing the primary features of the MVP for Android and iOS applications using **C#** and **Xamarin**. This project, targeted for an event and conference organizers startup, involved crafting functional and user-friendly mobile interfaces, significantly contributing to the **startup's** ability to attract investment by demonstrating a viable, engaging product.
- After the successful implementation of the MVP, I transitioned to the **Android** native team, focusing on **Java** development. In this role, I was responsible for further developing and refining the Android application, implementing advanced features and enhancements to improve user experience and functionality

Mercury Development LLC

Samara, Russia

DEVELOPER

Jan. 2013 - Jan. 2015

- Developed an innovative Android-TV application using **Java**, enabling users to seamlessly upload and display PDF presentations via box.com. This solution provided a convenient, streamlined approach for users to manage and present documents directly on Android-TV devices, enhancing the efficiency and interactivity of presentations.
- Engineered a versatile **Java** SDK library for Android, enabling third-party vendors to integrate and manage data on a bespoke fitness tracker via **BLE**. This library provided crucial functionalities such as device-specific data encryption/decryption, efficient data management operations (load, update), and firmware update capabilities. The solution played a key role in facilitating brand versatility and market expansion for the fitness tracker owner, by allowing rebranding and adaptation of the tracker across different vendors.
- Contributed to the development of a **Java**-based **RPC** service for an embedded music system server in recording studios. My responsibilities included coding critical components of the server framework to handle requests from studio devices, facilitating efficient data processing and operational control. This work was integral to enhancing the system's responsiveness and functionality in a professional audio recording environment.
- Engineered a live-search feature using **Java** and **Solr** for a fitness website, enabling real-time, relevant food search results from a database of over 5 million entries, significantly enhancing user search experience.

Honors & Awards

HUAWEI

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|------|---|----------------|
| 2020 | Best Support Award , Awarded for exceptional support to the HQ team in integrating our R&D solution into Huawei Cloud services. This recognition reflects a commitment to collaborative success and technical excellence in complex cloud solutions. | Mosco, Russia |
| 2021 | Best Quality Award , Received for delivering outstanding product quality in contributions to Huawei Cloud. This award highlights the emphasis on high standards and the impact of our work on the overall quality of Huawei's cloud offerings. | Moscow, Russia |

Presentation

GopherCon Singapore 2023

Singapore

SPEAKER WITH "GO LOW LATENCY PATTERNS" TALK AT GOPHERCON

Nov. 2023

- Focused on addressing latency issues in Go programming.
- Discussed various tools and techniques for memory and garbage collector analysis.
- Shared effective patterns and practices to optimize Go code for lower latency, offering practical insights for improving performance in Go applications.

Open source contributions

github.com/g4s8/gitstrap

CLI for managing GitHub resources

AUTHOR

Jan. 2019 - PRESENT

- Created a tool for managing GitHub repositories from YAML spec files
- Maintain repository, review pull-requests, resolve tickets
- Build CI/CD pipeline based on GitHub actions

github.com/g4s8/envdoc

Go tool to generate documentation for environment variables

AUTHOR

Jan. 2022 - PRESENT

- Created a tool to generate markdown, HTML or plaintext documentation from environment variable annotations in code
- Included into avelino/awesome-go list
- Mentioned in caarlos0/env README

github.com/golang/go

The Go programming language

CONTRIBUTOR

Jun. 2022 - PRESENT

- Bug fix in #60079 - fix go generate CLI tool
- Improved documentation for go build

- Regularly updating go package for new versions

Writing

Blog posts about Go at g4s8.wtf

AUTHOR

- Go low latency patterns — interfaces, generics and inlines
- Go low latency patterns — pointers
- The performance of Go error handling
- A few notes on cache lines in Go

Personal website

Jan. 2020 - PRESENT

Posts at medium.com

AUTHOR

- Keeping Your Go Environment Variable Documentation Effortlessly Up-to-Date

Medium

Jan. 2023 - PRESENT

Education

BMSTU

MASTER, ENGINEER

- aerodynamics

Moscow, Russia

Sep. 2008 - Aug. 2014