

Konstantin Gredeskoul

Startup CTO, Engineer, Architect, Rubyist, Bazelísta

RUBY • RAILS • Bazel • Golang • TypeScript • SHELL • JAVA • C/C++ • SQL • XP • TDD
Cloud • DevOps • Distributed Networking • Security • PostgreSQL • Scaling • SRE

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PROFICIENCY

Ruby (& Rails) ●●●●●●●●●●

TypeScript (NodeJS) ●●●●●●○○○

C/C++ ●●●●●●○○○

OO DESIGN ●●●●●●●●●●

DATABASES & SQL ●●●●●●●●●●

UNIX SHELL ●●●●●●●○

DEVOPS ●●●●●●●○○

BAZEL ●●●●●●○○○

SUMMARY

Konstantin is a passionate in all things technology alpha-geek as well as the musical nerd. Having lived on three continents and endured two immigrations, Konstantin is a resilient, perpetually curious, progressive and creative "outside-the-box" problem solver. Having started at the young age to participate and win national mathematics olympiads in Eastern Europe, he graduated with the highest distinction from Monash University in Australia majoring in mathematics and statistics. Konstantin is a completely self-taught software engineer who had learned at least a dozen of programming languages (C, Perl, Fortran, Pascal, C++, JS, Java, Objective-C, SQL, CSS/HTML, Ruby, Golang, Bazel, Rust, TypeScript, BASH and twice that many frameworks). Among the highlights of his two-decade career is several massively popular web-applications that all needed to be built in an unreasonably short amount of time with too few people, which had to scale two orders of magnitude every six months, while staying available 99.99% of the time.

Konstantin is a recognized ruby expert, conference speaker and open source contributor, with an excellent eye for efficient, modular, and loosely coupled software architecture, clean, organized, and well-tested code. As a CTO of four VC-funded startups in Silicon Valley he led software teams from 2 people all the way up to 25, and had interviewed, hired, trained, and mentored hundreds of software engineers, proactively seeking, engaging and hiring bootcamp graduates, in the process discovering young and talented developers some of which made it onto the list of Forbes under 30 .

He authored over forty open-source libraries in Ruby, C/C++, CMake, Arduino, Bazel, and BASH. His Ruby gems have been downloaded over [50 million times](#), while his [online presentations](#) have been viewed by over 250K people worldwide. Konstantin often speaks at conferences, including [RubyConf Australia](#), in 2015

PROFESSIONAL EXPERIENCE

FOSSA, Staff Software Engineer

● 09/2020 — 09/2021

As a member of the systems team I joined the project aimed at preventing the forced transaction XID wraparound vacuum on their primary PostgreSQL database, which was the result of disabling auto-vacuum back in the early days. With less than two months left on this ticking time-bomb, Konstantin adequately sized and migrated the instance a multi-AZ RDS configuration, and was able to complete the vacuum in time, saving the company from a potential multi-day downtime. He subsequently participated in projects aimed at reducing the AWS cost, reorganizing SQL schema to compact a 27TB database table, and implement unique job feature in the open-source NodeJS client library of Faktory, which required Konstantin to reach advanced expertise in TypeScript & NodeJS in less than three months.

FLARE.BUILD, Bazel Course Content Author [Contract]

● 07/2020 — 08/2020

Part of a small team tasked with creating a two-day training course on the Bazel Build system with eight hours of lectures and eight lab hours with less than one week's advance notice. I contributed several lectures, concept diagrams, Github actions CI integration, setup scripts, and proof-read/edited the entire set of 260+ slides.

EDUCATION



1993 — 1995

Monash University,
Melbourne, Australia

Bachelor of Science (Honors)
Mathematics & Statistics



1992 — 1993

Kharkov State University,
Ukraine

Mathematics
and Advanced Calculus

HOBBIES & INTERESTS



Open Source Software

Electronics / PCB

Laser Cutting

Arduino / ESP8266

Drumming

Guitar

Piano

Electronic Music

DJ (House / Tech-House)
as [XeroFox](#)

Produced two albums as
[PolyGroovers](#)

Whitewater Kayaking

Bicycling

MEDCREDS, Consulting CTO [Contract]

• 04/2020 — 07/2020

Helping the pre-funding startup with architecture, VC pitch, and product positioning using the latest W3C standards in the areas of Verifiable Credentials, Digital Wallets, Self-Sovereign Identity and distributed public key infrastructure built atop of a Sovrin Blockchain.

COINBASE, Senior Software Engineer (Level 6)

• 06/2019 — 01/2020

I worked on extending the **Bazel Build System** using [Starlark](#) programming language (a subset of Python) to **support Ruby language**, as a part of the Developer Productivity Team's initiative. The outcome was an open-source project [rules_ruby](#) which allows any ruby project to be built, run, and tested (eg, on CI) using standard Bazel commands.

FLOWINC.APP, DevOps Automation [Contract]

• 12/2018 — 05/2019

Six-months contract with a fin-tech startup in VC fund management space.

Built a complete cloud automation from scratch using **Chef Enterprise on AWS**, and following all AWS security guidelines. Provisioned multiple environments (dev, staging, production) in EC2.

HOMEBASE, Infrastructure Architect

• 08/2017 — 12/2018

Conceived and lead a massive revamp of Homebase's systems architecture and deployment for the next generation of growth. Initially, I was brought in as a contractor to help address scaling pains. After a couple of months I was offered to switch to full-time employment (which I did, as I really liked the team) to continue my work on addressing the performance issues and infrastructure automation. During that time:

- Introduced a number of significant resilience improvements, achieving 99.99% uptime in only a couple of months. Utilized multiple PostgreSQL read replicas to improve performance and stability, using Makara gem.
- Built out infrastructure automation using Chef Enterprise and Docker on Ubuntu, integrating with AWS services such as RDS, S3, SNS and EC2. Reduced AWS costs by 2X by switching to self-managed Redis & Memcached, consolidating app servers onto reserved instances.
- Tuned Ruby garbage collection parameters and built Ruby interpreter with jemalloc, thus reducing memory footprint by 3X.
- Tuned concurrency settings of Puma and Sidekiq for maximum throughput while minimizing the number of involuntary context switches.
- Rebuilt deploy process using Capistrano, managing a non-downtime deploy in just under 60 seconds.
- After rebuilding the Production, Staging and multiple Dev environments, focused on reducing CI build times by 2-3X using aggressive caching and smart retries.
- Finally, rebuilt the developer tooling (initial setup, secrets encryption, deployment) in BASH v4.

WANELO, Chief Technical Officer / VPE

• 12/2011 — 01/2016

I joined the company as an employee #3, after the Founder, and her sister. Working at two jobs for a couple of weeks, I threw myself into fixing site's chronic outages caused by its own popularity, and lack of performance-oriented design of Wanelo's first codebase. After applying some amount of ingenious CDN caching with Fastly gave us a few months of breathing room, I focused on establishing high-performance engineering practices with the newly formed engineering team.

- Closely following the Pivotal Process, my team agreed (reluctantly, at first) to try **full-time pair-programming**, in addition to more familiar practices of continuous integration, daily deployments, and TDD. In just under two months that followed, with the team of six (myself included), we replaced the old Java app - 90K lines of code and no tests - with a compact Rails app - only 10K LOC, half of which were tests. We then brought the new app live, migrated the data from MySQL to PostgreSQL,

NOTABLE OPEN SOURCE WORK

All projects listed below are open source and distributed under the MIT license.

Rules Ruby for Bazel (67 ★)

Primary maintainer of the Rules for Ruby Bazel project.

Simple Feed (Ruby Gem) (298 ★)

Redis-backed activity feed implementation that scales to millions of users, optimized for constant rendering-time of the feed

Sym (Ruby Gem, CLI) (136 ★)

Symmetric encryption library based on OpenSSL, supports password-protected symmetric keys

MakeABox.io &

laser-cutter (Ruby Gem) (79 ★)

Rails-based one-page site for generating PDF templates aimed at a laser-cutter, that generate enclosure boxes with sides that snap onto one another

Ventable (Ruby, Gem) (58 ★)

Ruby-based CLI tool for automatically downloading and installing Arduino Libraries into an Arduino project, that works somewhat similar to Bundler

CMake Project Template (523 ★)

A popular template for C/C++

LANGUAGES

English (Fluent)

Russian (Fluent)

Spanish (Beginner)

and swapped Cloud vendors all at the same time... with just one hour of planned downtime for maintenance. Full story here.

- **Automated cloud deployment with Chef**, strategically providing automated tests with all Chef recipes. Used HAProxy as a routing layer as well as the resilience mechanism for fail-over. This architecture was the subject of my RubyConf OZ talk "DevOps without the Ops".
- Stack: Ruby, jRuby, Rails, PostgreSQL, Redis, the proxy, Nginx, haproxy, Elasticsearch, Solr, Memcached, Chef, Capistrano, Joyent Cloud, SmartOS, dTrace, Objective-C, iOS.

Professional experience between 1995 and 2011 is available upon request or my [LinkedIn Profile](#).

REFERENCES

"I have worked with Konstantin and can say he is bar-none the most technically minded CTO and leader I have ever worked with. He has an amazing depth in system turning, scaling distributed architectures, ruby programming, and database tuning.

His biggest contribution, though, was building a super well-oiled engineering team that is the dictionary definition of efficient, lean and driving a fully automated deployment infrastructure, and enforcing best practices such as TDD in a pairing environment.

Overall Konstantin is a super passionate and creative technologist, and a leader, and he would be a great asset to any team that wants to build an amazing tech org. I would fully work with him again in a heart beat."

Matthew Camuto
Hands-On Startup CTO, SW Architect
Reported to Konstantin @ Wanelo

"As a CTO Konstantin puts great focus in developing a healthy engineering culture that extends outside his organization. He is able to build and lead extremely efficient teams by focusing on team success and empowerment.

Konstantin not only has formidable CTO skills, but is also a superb engineer. He is constantly refining his preferred stack to increase productivity and scalability. He is one of the brightest people I have ever met. He is a swift thinker and is able to come up to speed and give invaluable feedback. He uses all those skills to lead his team into success."

Richard Millan
Engineering Leader
Reported to Konstantin @ Wanelo

Additional references are available upon request, as well as on the [LinkedIn Profile](#).