

# Konstantin Gredeskoul

**AI-First Staff / Principal Software Engineer, Tech Lead**  
Startup ex-CTO (4x), Conference Speaker, Open Source Contributor

## LINKS

<https://kig.re/> — tech/personal blog  
<https://github.com/kigster> — personal github  
<https://github.com/inquirex> — current side project  
<https://rubygems.org/profiles/kigster>  
<https://reinvent.one> — consulting, talks, opens source

Staff/Principal engineer with 20+ years building reliable distributed systems and transactional platforms. Recent focus: shipping AI-assisted systems into production, including retrieval and embedding pipelines, eval harnesses, and workflow automation. Strong bias toward reliability, observability, and safety-by-design, so AI improves the product without becoming a new failure mode. Best in product environments that value ownership, technical rigor, and long-term system quality.

Strong systems engineer with a foundation in mathematics and statistics, comfortable operating from architecture through debugging. I build maintainable software with clean design, strong test coverage, observability, and safe rollout practices. I improve developer effectiveness through better onboarding, CI, and deployment workflows. More recently, I've applied that same rigor to production AI systems built for real business use.

## CAREER HIGHLIGHTS

- **Shipped production AI systems with real operational constraints:** Built recommendation and workflow automation systems using Python, PostgreSQL, pgvector, embeddings, eval tooling, and LLM APIs, with a strong emphasis on reliability, observability, safe rollout, and measurable business value.
- **Led major platform rewrites and scale-ups:** Rewrote a 90K LOC Java application into 10K LOC Rails in 2 months, then scaled it 100x to 5K req/sec with 99.99% uptime using a 6-engineer pairing team.
- Resolved critical production and database failures: **Prevented extended PostgreSQL downtime on a 27TB database** nearing transaction wraparound; fixed repeated peak-hour Postgres failures and improved resilience under 10x traffic spikes.
- Built long-term engineering leverage: Authored open-source Ruby infrastructure, including **early Bazel rules for Ruby**; delivered widely viewed PostgreSQL scaling talks; taught Rails through RailsBridge; and hired and mentored high-performing engineers, open sourced 50+ libraries, **with 220M+ downloads**.
- Built email automation before it was mainstream: At Topica, architected large-scale mailing list and email marketing systems with click/open tracking and behavior-based follow-up campaigns, **eventually supporting roughly 250M emails/day**.

## SKILL PROFICIENCY

### CORE SYSTEMS & ARCHITECTURE

#### Systems Architecture & Distributed Systems



#### Concurrency, Reliability, & Scaling



#### PostgreSQL, SQL, Sharding, Data Modelling



#### Ruby, Ruby on Rails, E-Commerce, Payments



#### Unix/Linux, BASH/ZSH, Docker, IPCs, Developer Tooling



### APPLIED AI

#### Applied AI Systems, Agents, Evals, & Tooling



#### LLM Integration: OpenAI, Anthropic, Prompt/Tool Workflows



#### Python 3, Pydantic, FastAPI, AI/LLM Frameworks



### PRODUCT / APPLICATION ENGINEERING

#### Frontend: React, TypeScript, Next.js, Vite



#### JavaScript/TypeScript: Node.js, ECMAScript



#### C (99) / C++ (2011), BASH



### INFRASTRUCTURE

#### Cloud Infrastructure, DevOps, CI/CD, Terraform, CDK



## PROFESSIONAL EXPERIENCE

**Fractional.ai, Software Engineer**

09/2025 – 02/2026

- Designed and shipped a production recommendation service for an e-commerce platform, implemented in Python with PostgreSQL and pgvector, blending semantic similarity with historical sales and ranking signals.
- Built an automated, zero-downtime data refresh pipeline that regenerates embeddings and derived database objects from nightly PostgreSQL backups using parallel schemas, followed by a sub-100 ms multi-schema swap with full rollback capability.
- Implemented end-to-end evaluation and reliability tooling using Pydantic, Logfire, and Weave, ensuring recommendation quality and operational stability in production.
- Delivered an internal AI automation integrating Slack and Notion to extract actionable todos from team conversations, reducing manual tracking and improving follow-through.

**Paternity Leave of Absence, two months**

06/2025 – 08/2025

**Academia.edu, Staff Software Engineer**

08/2024 – 06/2025

Halved CI build times (15→7 min, hundreds of runs daily) by introducing Knapsack and automating CI/CD image builds with Terraform and AWS CodeBuild. Built a one-command dev environment, cutting onboarding from weeks to hours. Led a Datadog metrics overhaul, authoring an open-source Ruby gem for custom metric validation, and delivered internal training on Ruby concurrency. Redesigned and shipped the card expiration warning email system.

**HealthSherpa, Principal Software Engineer**

02/2022 – 03/2024

Removed backend single points of failure, achieving HealthSherpa's first 100% uptime during ACA open enrollment under 10x traffic spikes. Automated onboarding (1 week → 1 hour), unified observability with Datadog, and delivered internal talks on concurrency, PostgreSQL, and scalability.

**FOSSA, Staff Software Engineer**

09/2020 – 09/2021

Averted catastrophic XID wraparound on a 27TB PostgreSQL DB by migrating to multi-AZ RDS and completing emergency vacuum under 2-month deadline. Cut AWS costs, compacted DB schema, and added unique job support to Factory's NodeJS client—mastering TypeScript/Kubernetes to deliver production-grade features fast.

**Coinbase, Staff Software Engineer (L6)**

06/2019 – 02/2020

Unified Ruby & Go into a Bazel mono-repo, creating the first open-source rules\_ruby for Bazel, to enable hermetic Ruby builds/tests. Pioneered Bazel support for Ruby using Starlark, laying the groundwork for the current Bazel/Ruby integration that currently is part of Bazel Contrib.

**Homebase, Infrastructure Architect**

08/2017 – 01/2019

Stepped in during critical instability caused by daily peak traffic, leading cross-functional efforts that restored 99.99% uptime through strategic DB read/write splitting (Makara) and system hardening. Spearheaded full AWS infrastructure rebuild using Chef and Docker, cutting cloud spend by 50%. Drove major Ruby performance gains (3x memory reduction, optimized GC/concurrency), introduced zero-downtime deploys, and accelerated CI by 2-3x. Empowered a high-performing team and built systems that let them sleep soundly again, and could be scaled another 10x without rewrites,

12/2011 – 01/2016

**Wanelo.com, CTO & VPE**

Joined as employee #3 and built the Engineering team from scratch to 25 employees. Collaborated with the founding engineers in rewriting the entire app in Rails. With 6 engineers, we rebuilt it in 2 months, creating 10x less code than Java, and 99% test coverage. Over the following six month, traffic jumped 100x.

Established CI/CD, TDD, continuous deployment, and pairing culture. Conducted over 1K interviews, and had just one person leave in 3.5 years. Invented a new distributed design pattern based on HAProxy for routing and auto-recovery—featured in my RubyConf talk "DevOps Without the Ops."

The application reached top-10 Apple Store rankings multiple times, won TechCrunch Disrupt, and handled 10K requests/second through heavily optimized multi-threaded Puma processes running on Joyent Cloud.

## OPEN SOURCE CONTRIBUTIONS

This sidebar features several open source projects that demonstrate a wide range of skills, while at the same time showing the code I wrote in the past, proving the ability to deliver and finish a project, whether it's an MVP, an online free tool, or a game.

**[gomoku-ansi-c \(3 ★\)](#)**

ANSI Terminal game with a pretty strong AI player that you can build & play on a MacOS. Play at <https://app.gomoku.games>

**[simple-feed \(335 ★\)](#)**

Ruby gem that uses Redis shards to implement O(1) read time for a social feed of any kind.

The next set of gems are simply either popular, or unusual, or interesting in their own right.

**[puma-daemon \(2M downloads\)](#)****[cmake-project-template \(945 ★\)](#)****[sym \(138 ★\)](#)****<https://makeabox.io>**

Free online tool for creating vector drawings for laser-cutting 3D enclosures

**[https://bashmatic.dev \(170 ★\)](https://bashmatic.dev (170 ★))**

Project site for the open source Bashmatic framework.

## CONSULTING

Between 2015 and 2018 I ran a consultancy through the newly founded company ReinventONE: <https://reinvent.one>.

The contracts typically covered urgent issues such as scalability, lowering latency of the web pages or API responses, adding observability, vertical and horizontal sharding, multi-AZ migrations, event-driven data modeling, etc.

The clients included:

- [Flow Investor Portal](#)
- [HIRED.com](#)
- [JoinHomebase.com](#)
- [Reflektive, Inc](#)
- [Returnly.com](#)
- [GoShippo.com](#)

## EDUCATION

**Monash University, Australia**

Bachelor of Science w/Honors  
Mathematics & Statistics  
Summa Cum Laude, Top 1%

[Published Graduate Thesis](#)

**Kharkov State University, Ukraine**

Advanced Mathematics  
**Ukraine National Mathematics  
Olympiad Winner**



## REFERENCES

Available on request