

# Konstantin Gredeskoul

San Francisco, CA  
email: [kig AT reinvent dot one](mailto:kig@reinvent.com)

Work Status: US Citizen

**Alpha-geek, swiss-army-knife CTO, software architect, mentor, speaker, rubyist, open source contributor, dev-ops Nerd, hardware tinkerer, musician and a DJ**

- <https://github.com/kigster>
- <https://kig.re>
- <https://reinvent.one>
- <https://linkedin.com/in/kigster/>

## Summary

As a passionate software engineer and software architect with over twenty years of commercial software development experience I've built a wide range of highly-available **distributed systems** across multiple programming languages and frameworks. As a technical leader I've served as a CTO at four different startups and in some built the team from scratch. As an avid open source contributor, Ruby aficionado, and mentor I've delivered thousands of lines of code, and **released 40+ public Ruby gems** that have been downloaded **nearly 11 million times**<sup>1</sup>. My conference presentations on scalability, PostgreSQL, Ruby and Rails have been viewed more than 200,000 times, helping the programming

community avoid common pitfalls and reuse battle-tested enterprise architecture design patterns.

I look forward to bringing my deep expertise and pragmatic approach to a highly collaborative culture of software development. I am huge fan of pair-programming, code-reviews, TDD, CI/CD pipelines, operational dashboards.

I hope to join a stellar engineering team with shared values of **COLLABORATION, COMMUNICATION, SOCIAL AWARENESS, OPTIMISM, and a dedication to the MASTERY** of software engineering craft.

## Proficiency

- Expert Ruby and **Ruby on Rails (14 years)**, RSpec, MiniTest, Sinatra, Capistrano, Devise, etc.
- **ANSI C (20 years), C++11 (intermediate)**, Arduino, Teensy, ESP32, hardware programming
- **Expert DevOps — Chef, Docker, BASH, AWS, GoogleCloud, VPN**, Cisco firewalls
- Advanced **Java programming** (6 years)
- **JavaScript** (20 years), ECMA6 (2 years), TypeScript (1 year)
- **Expert BASH v4** programming using taps for testing. Contributed "search" to [Bash-It](#)
- Fluent in **object-oriented design utilizing SOLID principles**
- Deep expertise using and running **PostgreSQL** (16 years), advanced SQL knowledge, and performance tuning
- Excellent at **troubleshooting distributed systems** and fixing performance bottlenecks
- UNIX systems programming using C and Ruby
- Process: Agile, CI, CD, pairing, TDD, BDD, Retrospectives, Planners.

## Education

### College

#### Monash University, Melbourne, Australia

**Honors Degree of Bachelor of Science**, with major in Abstract Mathematics and Statistics (1992 – 1995)

- Dean's list of academic excellence two years in a row
- Australian Statistics Society Scholarship
- Completed three-year study in two years

#### Kharkov State University, Ukraine

**BSc**, Mathematics and Advanced Calculus (1991 – 1992)

### Volunteering Experience

#### Mentor at Rails Bridge (Women in Tech)

January 2012, 2013

#### Mentor, Judge at IncubaUC, Santiago, Chile

September 2015

I was a mentor during a week-long trip to **GeekCamp** in Santiago, Chile organized by Austral Capital VC. I helped the organization to filter down from 43 entrants to 15 winning startups that got grants and opportunity to come to the US.

<sup>1</sup> As of May, 2019.

## Courses & Continuing Education

### dTrace: Core Features & Performance Analysis

Joyent, San Francisco, March 2013

### iPhone Development Bootcamp

iPhone Development Bootcamp,  
San Francisco, February 2012

## Publications

### “Hadoop, There It Isn’t—A Startup Bucks the Big Data”

ReadWrite, February 3, 2014

### “How Joyent's cloud helps Wanelo analyze its Big Data”

Venturebeat, SEPTEMBER 10, 2013



#### Note on how to read the following work experience:

I've been a full-time employee in the USA between 1998 and 2015. In 2015 I started a consulting company **ReinventONE** — <https://reinvent.one/> — and through that I have worked with companies in SF — large and small, while also developing open source libraries in my spare time. The table below describes only the short-term contracts and two open source projects completed between 2015 and 2018. For the full-time employment history please refer to the next three pages.

## Recent Contract/Consulting Experience

Year	Period	Company	Project	Stack
2017	August-October	Homebase	Scalability efforts to reduce PostgreSQL CPU usage and spread the load across replicas. Switched to full time after three months of contracting. Introduced Makara Ruby gem for multi-database support.	PostgreSQL 9.5 Ruby 2.5.3 Rails 5.0 AWS/RDS
	May-July	Returnly	Wrote a demonized process in Ruby for scalable processing of AWS Kinesis queue stream and dispatching as events via Sidekiq.	Ruby 2.5.3 RSpec Kinesis
	March	Open Source	<b>Sym &amp; SymCrypt</b> Ruby Gems — a symmetric encryption library with rich CLI and a Ruby API. Can be used for encrypting application secrets in git repos in a completely seamless way. <a href="https://git.io/vyouE">https://git.io/vyouE</a>	Ruby 2.3.3/2.4.0 RSpec, OpenSSL
	January	Open Source	<b>SimpleFeed</b> — social activity feed library based on Redis backend and sorted set data type, scalable to millions of concurrent users using Twemproxy data-sharding layer. <a href="https://git.io/vyfft">https://git.io/vyfft</a>	Ruby 2.3.3/2.4.0 RSpec, Redis, Twemproxy
2016	April–September	GoShippo.com	Deployment automation for dockerized application. Automate build settings, secrets management, and environment management. Sped up deploys from 30mins to 17secs.	Ruby 2.3, Docker, Capistrano, RSpec, OpenSSL, AWS
	February — March	Hired.com	Speeding up raw performance of hired.com. Made 2X improvement.	Ruby 2, Rails 4, PostgreSQL, Heroku
	January	Innit.com	Analysis of the internal and external data models, inception and task breakdown of import app	PostgreSQL, XML, JSON
	January — February	GoShippo.com	Tooling for developers to get fully setup with latest dev tools for Python, and a Docker-based application.	Python, ruby, bash
2015	December	TryButter.com	Product inception, estimation, task breakdown, MVP definition and timeline estimation.,	

## Employment experience (summary)

### Cloud Architect at Flow Tech Services, LLC

November 2018 — April 2019 (6 months)

### Platform Architect at Homebase

August 2017 – November 2018 (1.5 years)

### CTO at Wanelo.com

February 2012 – November 2015 (4 years)

### DOE at ModCloth.com

August 2010 – February 2012 (1 year 7 months)

### CTO at Drop In Media LLC

September 2008 – September 2010 (2 years 1 month)

### CTO at Infectious.com

June 2007 — May 2009 (2 years)

### Principal Web Engineer, Blurb

March 2006 – June 2007 (1 year 4 months)

### Senior Software Engineer, RedSeal Systems

September 2005 — March 2006 (6 months), San Mateo

### Systems Architect, Topica Inc

March 1998 – August 2006 (7 years), San Francisco, USA

## Employment experience (in detail)

### Systems Architect at Flow Tech Services, LLC

November 2018 — April 2019 (6 months)

I worked with a small team at Flow on their infrastructure. As I joined the team, there was no automated testing, no CI, the deploy process could only be done by one person, and so on. It was a Rails API backend with Angular JS front-end. My goal was to build from scratch their infrastructure "the right way": we used **Chef Enterprise** on AWS, and following all security guidelines I was responsible for provisioning multiple environments (dev, staging, production), using only Chef on EC2. I decided to use Ubuntu for cloud neutrality, and whenever a new node was added Chef installed **MRI Ruby with jemalloc**, deployed our application using **Capistrano** (via a localhost deploy), registered Ruby's services such as Puma and Sidekiq as SystemD services, and installed and configured **NGinx, Haproxy, Redis** and Memcached into the mix, while still relying on RDS for **PostgreSQL**.

In just under months we had a world-class secure (VPN-only), resilient and fault-tolerant systems architecture using **Haproxy** and **DNS failover** to handle failures. I signed up and

configured **DataDog** and **NewRelic** monitoring and alerting of all operations, created dashboards and **Slack** alerts.

Besides working on the infrastructure, I introduced the young engineering team to the **XP Agile Process** with point estimation and led the first few PivotalTracker-based planners. The process was adopted and resulted in better communication and faster feature delivery. After the infrastructure project I took on technical debt of the primary Rails API backend, accomplishing the following: **test coverage went up from 0% to 62%**, integrated tests with CircleCI workflows, wrote unit and controller tests and created reusable shared examples, wrote developer setup scripts in BASH, and introduced secrets encryption into to the workflow.

**Stack:** Ruby 2.5.3, Rails 5.0, PostgreSQL 10.1, Redis, HAProxy, Nginx, Memcached, Chef, Capistrano, Sym, AWS EC2/RDS, CircleCI, VPN, Ubuntu, AngularJS

### Platform Architect at Homebase

August 2017 – November 2018 (1 year, 4 months)

Revamped Homebase's systems architecture for the next generation of scale. I joined the team initially as a contractor, and then, after a couple of months, as a full-time employee, to work on addressing the performance issues and growing pains Homebase was going through at the time. I was able to introduce a number of significant performance improvements, reaching ptime of 99.99% in only a couple of months. I accomplished this by introducing multiple PostgreSQL replicas and distributing the app load across them, as well as rebuilding the infrastructure using Chef

Enterprise and Docker on Ubuntu, wrangling AWS services such as RDS, S3, SNS, and EC2, optimizing our Ruby, Rails stack to work well with Redis, PostgreSQL and Memcached, all while deploying many times daily with Capistrano. Also responsible for reducing CI build times by 2X with CircleCI, and Docker-based parallelism. Built out the developer tooling (setup, secrets encryption, deployment) in the (nearly object-oriented) BASH v4, while open-sourcing the core library at <https://github.com/kigster/bashmatic>

**Stack:** Same as above (except ReactJS instead of AngularJS) ↑↑↑

## CTO at Simbi.com

October 2016 - March 2017 (5 months)

Simbi is building a symbiotic economy marketplace, where you can find, use and learn the quirkiest and unusual things. I joined the company shortly after their YC round of financing and focused on streamlining and formalizing product development process. We were able to reduce friction by switching to Pivotal Tracker, improve code quality with more attention on automated testing and continuous integration. I helped guide the team towards a more modular software architecture while personally focusing on increasing operational transparency of the production environment through real-time monitoring and intelligent alerting.

I contributed an open source library that supported the "Activity Feeds" feature on the site — where the relevant events are shown in a chronological order. The library is based on Redis, and ensures constant access time for reading and rendering the feeds.

I managed the team with 1-1s, and hired talented engineer(s) into the team, while striving to create a truly collaborative engineering culture despite cultural and time-zone differences with an outsourced dev team.

## CTO at Wanelo.com

February 2012 - November 2015 (3 years 9 months)

I joined the company right after Deena's (CEO, and a Founder) initial seed round. Working at two jobs for a couple of weeks, I jumped into fixing site's continuous outages caused by its own popularity and lack of performance-oriented thinking in the first prototype codebase. After applying sufficient amount of "duct tape" allowed the company a few months of breathing room, I focused on establishing high-performance engineering practices within the newly formed team. Closely following the Pivotal Process, my team agreed 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, we replaced the old Java app – 90K lines of code, no tests – with a compact Rails app – 10K LOC including tests. We then

brought live the new application, migrated data from MySQL to PostgreSQL, and swapped Cloud vendors all at the same time. With just one hour of planned maintenance. Full story: <http://bit.ly/ONeXPb>

From the very beginning our cloud infrastructure is 100% automated with Chef (enterprise), and most of the software is covered by the automated tests. These two practices, introduced from the beginning enabled the company to avoid having to hire a dedicated Operations or QA teams. Cloud and CDN resources are now provisioned and configured by the developers, across a range of technologies and vendors. See the following presentation at RubyConf Australia 2015: <http://www.slideshare.net/kigster/dev-ops-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, Android, scaling, automation.

## Director of Engineering at ModCloth.com

August 2010 - February 2012 (1 year 6 months)

ModCloth.com is an online clothing, accessories, and decor retailer recently featured as #2 fastest growing American company in the Inc 500 magazine <http://bit.ly/8ZGrur>

My role combined both technical leadership as well as management of a 20+ person development team. Additionally, responsible for directing the company from monolithic application towards SOA, helping the team adopt

Solr search engine, automate deployment, and many other higher-level initiatives such as test-driven development with continuous integration, paired programming, short and frequent release cycles, migration to the cloud, and zero downtime releases.

**Stack:** RoR, MySQL, PostgreSQL, Capistrano, Redis, Memcached, RSpec, SmartOS/Solaris

## CTO & Founder at Drop In Media LLC

September 2008 - September 2010 (2 years)

Industry: SMS/MMS, billing, premium messaging, carrier relations, carrier application development.

In-house developed enterprise platform supported high volume SMS/MMS messaging, plug-in architecture for business logic, as well as billing and routing functionality similar to that of an SMS aggregator.

Bootstrapped company part time in 2004, later transitioned into a full-time CTO role. In charge of all internal IT, Operations, Development, QA, technical integrations, evaluations, support for business development and marketing initiatives, as well as hiring and managing an internationally distributed team of developers for a company of about 10 people.

**Stack:** Java 1.6, Hibernate, Spring, JUnit, Linux, PostgreSQL 8 and 9

## CTO at Infectious.com

June 2007 - May 2009 (2 years)

Online user-generated and voted store for car decals

Infectious is an art community plus an online store, with a crowd-sourced content model built around modern art printed on adhesive vinyl. All aspects of technology, from operations,

IT, engineering and hiring. Infectious.com Inc employed about 10 people.

**Stack:** RoR, PostgreSQL, RSpec, Capistrano, Linux

## Principal Engineer, Blurb.com

March 2006 - June 2007 (1 year 3 months)

Online book publishing store and a marketplace

Lead Blurb's web team (four-five people team) in launching one of the first e-commerce applications on Ruby on Rails in 2006, in under four months, including data migration from the

prototype. Together with my team learnt Ruby and RoR. Blurb.com received a Webby Award in 2007.

**Stack:** RoR, PostgreSQL, Java 1.6, Hibernate, Spring

## Senior Software Developer, RedSeal Systems, Inc

September 2005 - March 2006 (6 months)

Security and threat detection software company

Designed two-tier plug-in framework to support a variety of devices and communication protocols (SSH, FTP, SCP), as well as the threat database lookup library.

**Stack:** Java, Hibernate, PostgreSQL, Spring Framework, RMI, Client/server, Swing, XML/XSD.

## Systems Architect, Topica, Inc.

April 1998 - August 2005 (7 years 4 months)

Public mailing lists and small business email marketing

Topica was a technology company providing the next generation online marketing automation software as an ASP to online retailers, publishers, small and medium sized businesses. Since the Topica Exchange web site was first launched in 1998, Topica System has grown to a subscriber base that exceeded **200M subscribers** and was sending **250M messages per day** to highly targeted or segmented audiences.

As a senior engineer initially, and then as the systems architect I helped to choose the underlying 3rd party technologies, took part in designing the back-end infrastructure and the database schema. Subsequently, I lead the development team in implementing the design in C and Perl5, using Oracle 8i and BEA's TUXEDO system (which provided middleware capabilities, fail-over, redundancy, distributed transaction management and centralized application administration).

Topica Architecture was a horizontally and vertically scalable 3-tier enhanced client/server OLTP system with a distributed database backend, and is seamlessly integrated with four web applications, Email Transport Layer, Verity Search Engine, Advertising Module, and Secure Payment Processing and Credit Card Collection subsystem. The application spanned over 100 server computers, which range from basic 1U and 2U Intel-based dual processor systems to a set of mid-range 4-CPU Sun E450 and E250 high availability clusters with shared fibre-optic disk arrays. In January 2003 Topica System reached the peak loads of about 600 transactions per second.

Topica was responsible for sending over 200M email messages per day in 2001, **which at the time represented nearly 1% of all daily Internet email.**

**Stack:** Oracle 8i, BEA Tuxedo, Perl5, Perl/XS, C, Apache, mod\_perl, XML, Java, Hibernate, Verity, gcc, gdb, make, Linux.



**Matthew Camuto, Sr. Software Engineer, was managed by Konstantin at Wanelo.com**

"I have worked with Konstantin and can say he is bar none the most technically minded CTO and leader I have worked with. He has an amazing depth in system turning, scaling architectures and 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 creating technologist and leader and 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 heartbeat. "

**Marcy Swenson, Executive Coach, StartupHappiness.com, was an executive coach to Konstantin:**

"Over and over, I've seen Konstantin focus not only on technical architecture & excellence, but on growing the people on his team. He continually works to hone his team's best practices, with the goal of making his team & company an incredible place to work. Whether it's carefully preparing to deliver actionable feedback, or charting next steps on career paths, or matching passions & skills with projects, Konstantin is relentlessly striving to help his team grow, and his company thrive."

**Richard Millan, Engineering Lead, Wanelo.com:**

"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. I have enjoyed working with him so much that I worked with him at three different companies!"

**Matt Levy, Senior Software Engineer, Topica, Inc.:**

"There are those people who you work with that will forever be a positive influence on your professional life. Konstantin is one of those people. Not only is he the must have person you want on your team when tackling the Big Problem, but he makes it seem easy and does it with grace. His skill in technology is only matched by his skill as a musician. A leader for the digital renaissance age."

**Tony Rose, CEO & Co-Founder at Drop In Media LLC:**

"Konstantin codes faster than lightning. I feel extremely lucky to have worked with Konstantin at Drop in Media. His skills with software architecture, development and team leadership is invaluable. He has a keen mind and a sharp intellect which he proves time and again while tackling difficult problems. His most valuable asset is his motivation and drive which is an inspiration and ensures the job gets finished."

**Tim Roberts, CEO & Founder, Infectious.com, Inc.:**

"It goes without saying that Konstantin is a talented engineer with deep expertise in a broad range of technologies. He built the foundation of Infectious and did everything technical we needed. He was a swiss army knife CTO who was hands on and great at getting stuff done. But he is more than a great technologist. He has incredibly good product sensibility, an eye for well-designed UI and passion for creating quality. He contributed heavily to the strategy with a very pragmatic approach, balancing business needs and technical vision. Konstantin is a solid leader and I look forward to working with him again in the future."

**Ariel Poler, CEO & Founder, Topica, Inc**

"Konstantin is a brilliant systems architect. He always found the fastest and most elegant approach to solve our technical challenges. He was a pillar at Topica and fundamental to many of our achievements. I hope I get to work with Konstantin again in the future..."