Stephen Gutekanst

Software engineer
12+ years experience

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Technologies

Go, TypeScript, Zig, PostgreSQL, Rust, Google Cloud, Grafana, Prometheus, Kubernetes, Terraform, Bash, and many more.

Experience

2020-present: Sr. Independent Contributor, Sourcegraph.com

- IC role focusing on high-value business wins, loosely reporting to Directors, Engineering Managers, and the CTO throughout.
- Solely developed MVP backend for Code Insights team in 3 months, architecture, documentation, and onboarding of new engineers once hiring caught up. Worked with Product to ensure backend would meet requirements and deliver code insights to engineering leaders, empowering data-driven decisions in customer' engineering organizations based on millions of search queries in an extremely high-cardinality data store.
- Primarily worked on a vital business need to address lucrative growth opportunities, taking ownership of and directly developing the CEO and CTO's pet project for generating API documentation for all open source and customer' code by indexing hundreds of millions of Go symbols, managing stakeholders, determining scope and project direction despite multiple levels of conflicting leadership, developing all code and collaborated with key engineering teams on a day-to-day basis for architecture buy-in. Worked with product and design teams throughout.
- Day-to-day responsibilities included debugging production ops incidents, managing major release incidents and coordinating with stakeholders, advising on core infrastructure questions/direction, debugging critical last-minute release blockers for unrelated teams when key engineers were unavailable.
- Performed audits of CSRF security threat model, advising understaffed security team on key future changes; unblocking search team and third-party integrators from using public APIs entirely
- Responsible for interviewing candidates on 3+ engineering teams, plus customer engineering and customer support teams - working with hiring managers to improve technical interview processes throughout.
- Advised customer-facing teams on complex technical issues, produced training material and videos
- Collaborated with marketing team by producing blog posts, Twitter content, and co-hosting podcasts
- Ensured the success of engineering teams needing changes in no-owner codebases - including syntax highlighting, core GraphQL APIs, etc. unblocking engineers via pair programming and through write-ups of key-recommendations for the future.

2020-present: Open source contributions & blogging (40+ hours a week)

- **Unicode data file compression: achieving 40-70% reduction over gzip alone** – a domain-specific compression algorithm for Unicode data files to optimize WebAssembly bundle sizes
- Implemented GLL parsers (from Haskell/Scala), one of the most complex types of parsing algorithms, implemented in a low-level language (Zig).
- **Runtime-composition of parser combinators in Zig** as the basis for a new kind of 'omnipotent' regex engine.
- Implementations and exploration around Xor Filters, Fuse Filters, and Binary Fuse Filters – state of the art algorithms which outcompete bloom filters for search indexes. Got a Tweet advocating my work from the esteemed Daniel Lemire
- Began working on Tridex, a 'better' version Google's Zoekt ("Fast trigram based code search"), leading to a multi-month analysis of Postgres performance and behavior: **Postgres regex search over 10,000 GitHub repositories (using only a Macbook.)**
- **Launched zigmonthly.org,** news for Zig developers with 8k+ viewers and hundreds of direct subscribers in just the first two months.

2019-2020: Sr. Distribution Engineer, Sourcegraph.com

- A founding role in the Distribution team at Sourcegraph, responsible for making Sourcegraph easy to deploy, scale, monitor, and debug.
- Led the team during management intermission while simultaneously authoring Sourcegraph's entire monitoring architecture from the ground up and onboarding and managing interns, and future engineering managers – a Go pipeline to generate out-of-the-box uniform Grafana dashboards & Prometheus alerting for site admins with no knowledge of Sourcegraph to reason about.
- Key role in interviewing and onboarding engineering candidates and managers for the team.
- Solely responsible for developing Sourcegraph's cloud managed instances offering, providing a clear vision and cost-effective path forward when company was otherwise unsure of investment; coordinating with sales to developing the entire red/black deployment infrastructure, Terraform automation, security, backups, processes for operation & cost estimation & maintenance – to later training others on the team and educating sales/bizops.
- Eliminated the highly-problematic part of setting up Sourcegraph called the "management console", a plague-like issue often locking site admins out of their own instance and finally resolving one of the most significant deal-blocking barriers for customer onboarding and ARR growth at the time.

2018-2019: Sr. Software Engineer & Technical Account Manager, Sourcegraph.com

- Worked directly in tandem with Sourcegraph's CTO, acting as one of the few engineers solely responsible for Sourcegraph's largest customers and ensuring their success as a dedicated highly skilled engineer with the product – leading to substantial fiscal wins.
- Technical point of contact for all questions, code changes, incidents, and more for a handful of Sourcegraph's earliest customers including direct and sole responsibility for the success of a major fortune-500 media streaming customer; working directly with and reporting to customers' technical teams, users, and decision makers on a weekly basis.

2015-2018: Full stack software engineer, Sourcegraph.com

- Created the Sourcegraph `src` CLI for customers such as Uber, making it easy to perform GraphQL API requests with auth easily & get JSON back fast, get search results in your terminal, etc. It became a core part of Sourcegraph with most team members contributing to it and most customers depending on it.
- Developed minimal Sourcegraph editor extensions for VS Code, Jetbrains, Atom, and Sublime editors in a one-week hack project, totalling ~30k user installations to date and a modest complement in Sourcegraph's product offerings to date.
- Took on ownership and maintenance of Appdash, an application tracing system for Go based on Google's Dapper and Twitter's Zipkin.

2010-2015: Full-time open source game engine development in Go, azul3d.org

- Became a core contributor to Go OpenGL community, worked with Go team at Google to improve interoperability between fragmented OSS mathematics packages
- Support for multiple different OS, substantial low level programming, debugging Go GC performance issues, developer onboarding.
- Developing Git proxies and enabling semantic versioning of Go packages (had no official support for it at the time.)
- Performance and design considerations of game engine; Supporting community members using the engine for e.g. NES emulators.

2013: Datacenter Technician @ Limelight Networks CDN (internship)

- Physical and remote management of Linux/Unix/FreeBSD hardware and software RAID systems at the Phoenix data center and at co-locations throughout the world.
- Physical maintenance and repair of server hardware, watching for literal/real fires and managing internal customers in such events, etc.

Education

- 4 years dedicated self-taught Go programming (10 years total)
- 3 years dedicated self-taught Python programming
- Associates in general studies @ GCC