

Bastian Gruber

Professional

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Code

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SUMMARY

Staff Engineer at Mozilla, shipping Rust, C++, and Python to hundreds of millions of Firefox users across Desktop, Android, and iOS. Promoted for leading cross-team projects and getting complex, multi-platform features shipped. 12+ years of backend and systems work across distributed services, Kubernetes-based infrastructure, and production operations; published Rust author and long-time technical writer.

SKILLS

Languages: Rust, C++, Python, TypeScript, Go

Systems & Backend: async Rust (Axum, Actix), Python/FastAPI, Node.js, FFI/UniFFI, gRPC, REST

Architecture: distributed systems, P2P protocols, system design, cross-platform (Desktop/Android/iOS)

Infrastructure & Observability: AWS, GCP, Docker, Kubernetes, CI/CD, Grafana, performance profiling

PROFESSIONAL EXPERIENCE

Staff Software Engineer

Feb 2026 - Present

Mozilla, Remote

Promoted for cross-team technical leadership and delivering multi-platform privacy features.

- Leading the Image Service project: replaced 3 fragile, duplicated favicon systems with a single GCS-backed API serving 4+ internal teams. Extended an existing Python/Airflow pipeline instead of building a new service, reducing maintenance burden across the board
- Implemented Oblivious HTTP (OHTTP) in application-services (shared Rust component cross-compiled to Swift/Kotlin via UniFFI) and wrote the C++ integration for Firefox Desktop. Now live on Firefox iOS, Android, and Desktop, covering millions of users
- Maintaining the Firefox Push notification service (Rust backend on Kubernetes, 50k req/s, sub-200ms latency). Reduced memory footprint, added circuit breakers, built Grafana dashboards for observability

Senior Software Engineer

Jun 2024 - Jan 2026

Mozilla, Remote

- Core maintainer of Merino, the Kubernetes-deployed Python/FastAPI service powering Firefox Suggest. All search suggestions in Firefox route through Merino, which enriches and serves them in a privacy-preserving way
- Code reviewer for UniFFI, Mozilla's multi-language bindings generator (Rust to Kotlin, Swift, Python, JavaScript)
- Contributing directly to Firefox Desktop (mozilla-central): shipping Rust and C++ code
- Led "Rusty Fridays" sessions (6-10 engineers per session), building internal Rust knowledge across teams

Technical Editor, "From C to Rust"

Feb 2026 - Present

Manning Publications (Contract, Part-time)

Reviewing technical accuracy and pedagogical quality for Manning's C-to-Rust migration guide.

Senior Systems Engineer, Team Lead Apr 2023 - Jun 2024
 Toposware (acquired by Polygon Labs), Remote
 Core team of 4 building a peer-to-peer distributed network protocol from scratch in Rust, with Kubernetes-based deployment and benchmarking environments. Our core implementation of the double echo protocol and the Ethereum bridge became part of the Polygon stack after acquisition.

- Achieved 10x message throughput per node by profiling the actual bottleneck: optimized batch processing and serialization paths after discovering nodes were compute-bound on crypto operations, not network-limited
- Built the EVM bridge connecting external Ethereum-compatible chains to the core network
- Led the internal benchmarking initiative that changed where the team focused optimization effort

Senior Software Engineer Aug 2022 - Feb 2023
 Centrifuge, Remote
 Protocol team building DeFi infrastructure on Substrate/Polkadot in Rust.

- Implemented on-chain fund pool mutations, the core feature enabling live capital allocation adjustments in the lending protocol
- Replaced manual documentation with CI-driven auto-generation from Rust source, eliminating persistent drift between code and public docs

Author, “Rust Web Development” Oct 2020 - Dec 2022
 Manning Publications
 Wrote and published an end-to-end guide covering async Rust, web frameworks, and production deployment.

Sr. Solutions Architect (promoted from SA) Jun 2020 - Jul 2022
 Twilio Inc., Remote

- Technical lead for Fortune 500 professional services engagements: diagnosed latency issues, redesigned messaging architectures, delivered implementation roadmaps sized to each client’s team and resources
- Created reusable engagement playbooks adopted across the EMEA Professional Services team

Systems Engineer, Core Backend Aug 2019 - May 2020
 Kraken Digital Asset Exchange, Remote
 Part of the first Rust team rewriting Kraken’s core infrastructure from PHP.

- Rewrote core banking services and API gateway in Rust, replacing legacy PHP services. The new stack handled significantly higher throughput with a smaller hardware footprint
- Shipped the first version of the automated KYC verification flow, replacing manual processing right as COVID drove a massive spike in new customer sign-ups

Earlier Career 2013 - 2019
 Sr. Software Engineer (freelance from 2016) across enterprise clients (OSRAM, Körber Digital, GIATA, Avenga) and startups (Dalia Research, blogfoster, smartB) in Berlin.

- Founded “Rust & Tell Berlin” meetup, grew it into the largest Rust meetup globally. Coordinated with companies for venue sponsorship, organized speakers, photographers, and videographers. Gave talks and created a welcoming space for the Rust community
- Designed IoT authentication infrastructure at OSRAM for thousands of connected devices (Node.js, Go, Lua)
- First engineering hire at Körber Digital: built real-time sensor data pipelines and cloud service deployments on AWS (Lambda, ECS, Route53, Kubernetes)
- Decomposed GIATA’s monolithic PHP system into 6 Docker-based services, taught the existing team Scrum and JavaScript
- Contributed to the Rust compiler and standard library during a self-directed sabbatical (2019)

Technical Writer 2008 - 2020

Freelance (Contract)

13 years writing for technical publications including c't, iX, Macwelt (IDG/Heise), and tech blogs (LogRocket, stadt-bremerhaven.de, mobilegeeks.de). Also authored “OS X für Einsteiger” (Bookboon, 2012).

EDUCATION

Bachelor of Science, Computer Science

Mar 2014

TH Ingolstadt. Scholarship from Allianz Deutschland AG (fully funded dual-study program, 2010–2014)