

Filip Vavera

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Professional Summary

Senior Software Engineer with 12+ years building backend, security, data, and distributed systems. Strongest work includes low-level cryptographic protocol implementations in Elixir, zero-downtime authentication migration, high-scale analytics pipelines, fintech/payment systems, and production LLM integrations. I work best on hard infrastructure problems where correctness, reliability, and fast execution matter.

Actively seeking US relocation; require visa sponsorship.

Core strengths

- Backend and systems engineering in Elixir/Erlang, Phoenix, OTP, and SQL
- Distributed systems, event-driven architecture, Event Sourcing, and CQRS
- Data-intensive systems: ClickHouse, PostgreSQL, MySQL, pipelines, and workers
- Security engineering: authentication, authorization, SSO, SAML, MFA, OAuth, cryptography
- LLM/AI product integration and agentic workflows
- Technical leadership, design review, mentoring, and remote execution

Selected Systems Work

Independent low-level systems work in Elixir, focused on cryptography, protocol correctness, distributed networking, native integrations, and uncommon problem domains.

- **Noise Protocol** - Full Elixir implementation of the Noise Protocol framework for secure cryptographic channels.
- **Reticulum** - Implementation of the Reticulum cryptographic networking stack for resilient multi-medium networks.
- **Nostr Libraries** - Suite of libraries implementing the decentralized Nostr protocol.
- **secp256k1** - High-performance Elixir NIF bindings for Bitcoin's secp256k1 cryptography library.
- **Domainatrex** - Took over maintenance and rewrote the Public Suffix List parser for performance and edge-case correctness.
- **Elixir Astro** - Bindings for NASA SPICE and ERFA libraries for advanced astronomical computation.

Work experience

CrazyEgg - *Senior Software Engineer*

February 2022 - present

<https://crazyegg.com/>

- Lead technical design and implementation of secure, scalable Elixir backend systems for a high-traffic analytics product.
- Rewrote a 20-year-old custom Ruby authentication system to Elixir, including SSO, SAML, MFA, and secure password flows, with full backward compatibility and zero downtime.
- Built and optimized background workers, SQL queries, and analytics pipelines processing millions of events per day.
- Built internal operational tools and integrations that improved Customer Success incident

response by ~20%.

- Prototype and ship AI-assisted features and LLM/agent integrations in Elixir for Customer Success and engineering workflows.

BnT - *Software Architect*

May 2020 - December 2020

<https://bntlab.com/>

- Architected and delivered the full backend for a gold trading Proof of Concept using Event Sourcing and CQRS.
- Implemented payment processing, FX conversion, transaction validation, and core domain workflows as the sole backend engineer.
- Collaborated remotely with a small cross-functional team under tight deadlines.

DivvyPay (now BILL Spend & Expense) - *Team Leader and Senior Software Engineer*

April 2018 - February 2022

<https://www.bill.com/product/spend-and-expense>

- Led a team of 8 engineers in a fast-growing fintech startup as the company scaled from ~10 to 250+ employees.
- Owned technical strategy and implementation for payment processing, bank integrations, credit card issuance, and loan systems.
- Built and improved secure backend services for critical money movement and credit workflows.
- Pioneered remote execution as the only distributed engineering team member while maintaining reliable delivery across time zones.

profiq - *QA Engineer to Fractional CTO*

January 2015 - April 2018

<https://profiq.com/>

- Progressed from QA automation to full-stack development and technical leadership.
- Delivered production systems using Django, React, Node.js, and real-time services.
- Served as fractional CTO for multiple startups, leading architecture, implementation, and delivery.

Technical Skills

- **Languages:** Elixir/Erlang, SQL, Python, TypeScript, Ruby (maintenance)
- **Frameworks:** Phoenix, Phoenix LiveView, OTP
- **Data & Infra:** ClickHouse, PostgreSQL, MySQL, Redis, Kafka, Docker, Kubernetes, AWS, Google Cloud
- **Observability:** Datadog, Posthog, Sentry, Grafana, Prometheus
- **Security:** Cryptography, Authentication/Authorization, MFA, OAuth, SAML, Protocol Design
- **Other:** LLM integrations, Event Sourcing / CQRS, CI/CD