

# Paul Halvorsen

Software Engineer

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## Summary

Full-stack engineer with 15+ years building systems at scale. Deep expertise in distributed systems, Python development, and building robust infrastructure for complex, regulated domains. Proven ability to learn new technologies and problem spaces quickly while maintaining code quality and system reliability. Experience designing and operating systems handling billions of dollars in transactions with zero tolerance for failure. Excited about solving hard problems at the intersection of technology and regulated industries.

## Work Experience

### Abnormal AI

**Software Engineer:** Jan 2026 - Present (Remote)

- **Large-Scale Infrastructure:** Architect and maintain 10 Kubernetes clusters across multiple regions (US East, US West, EU West, government) with auto-scaling and production-grade reliability requirements
- **Python Microservices:** Build and maintain core data aggregation services handling real-time and long-term storage with comprehensive pytest coverage and unit testing throughout
- **System Design & Operations:** Design systems that reliably serve multiple customers simultaneously with varying data requirements across geographies
- **Performance & Reliability:** Implemented auto-scaling strategies and compression pipelines to increase efficiency and manage costs at scale
- **Cross-functional Collaboration:** Work in tight team environment with heavy inter-team communication in monorepo structure; partner with infrastructure, backend, and product teams
- **Ownership Model:** Own features end-to-end from design through deployment and monitoring

### Binary Defense

**Sr Software Engineer:** April 2022 - Oct 2025

- **Distributed Event Processing at Scale:** Built systems serving Fortune 500 enterprise customers handling billions of events daily across thousands of endpoints
- **Infrastructure & Reliability:** Deployed on Windows, Linux, and macOS with cross-platform testing and reliability as foundational requirement
  - GitLab CI/CD pipelines for compilation, testing, and deployment
  - Docker containerization for consistent reproducible builds
- **Python Backend Development:** Designed and built multiple production services with focus on performance, reliability, and maintainability
  - pytest-driven test suite ensuring confidence in changes
  - Performance optimization: reduced CPU usage 90%, memory usage 60%, network traffic 80%
  - Built data serialization and transformation pipelines for reliable backend communication
- **System Design:** Engineered event-driven architectures handling filesystem, user, and network events with deterministic behavior

- **Architecture & Standards:** Wrote RFCs and ADRs to drive technical decisions; contributed to code quality and documentation standards
- **Complex Integrations:** Designed secure integrations with Azure and other third-party services
- **Team:** Collaborated with experienced engineering team in SCRUM environment with strong code review practices

## Kyrus Tech

**Sr Software Engineer:** Nov 2020 - April 2022

- **Distributed Systems:** Designed and built multi-layered distributed systems with REST APIs and complex routing logic
- **Test-Driven Development:** Implemented comprehensive testing strategy using pytest; built infrastructure to enable confident, rapid deployments
- **Python & Docker:** Built containerized services leveraging Docker for reproducible deployments
- **Low-Level Systems:** Worked on performance-critical code including reverse engineering and systems analysis

## Technical Skills

**Languages:** Python (Advanced), GoLang, Rust, C, JavaScript

**Infrastructure & Cloud:** Kubernetes (10+ production clusters), Google Cloud Platform (GCP), Docker, containerization, system design, microservices architecture

**Backend Development:** REST APIs, distributed systems design, database design (SQLite, MySQL), event-driven architecture, scalable data pipelines

**Testing & Quality:** pytest, test-driven development (TDD), comprehensive unit and integration testing, code review culture

**DevOps & Tools:** GitLab CI/CD, Docker, Kubernetes, monitoring, logging, performance profiling

**Soft Skills:** Quick learner, cross-functional collaboration, autonomy, code quality focus, rapid iteration

## Education

- **University of Maryland Baltimore Campus** - Masters in Computer Science (2013)
  - Research in distributed systems and network security
- **Salisbury University** - Bachelors in Computer Science (2009) - Magna Cum Laude