

OVERVIEW

Senior Software Engineer with deep expertise in operating systems development, compiler tooling, and network programming. Specialising in systems-level C, C++, Rust, and Go development with proven record on performance-critical infrastructure at scale. Active contributor to the FreeBSD Project, delivering improvements to core system components, ports, and documentation. Committed to standards compliance whilst actively following programming languages design and implementation across evolving ecosystems.

SKILLS

- **Programming Languages:** C and C++ for systems programming, embedded development, and compiler tooling; Rust and Go for systems and backend services.
- **Operating Systems:** Deep knowledge of UNIX internals with extensive experience with BSD, illumos, and Linux families in both development and production environments.
- **Systems Programming:** Socket programming, IPC mechanisms, event notification mechanisms, BPF, Netmap, Netgraph, DTrace, concurrency primitives, sandboxing techniques, and low-level debugging and instrumentation techniques.
- **Virtualisation:** Extensive production experience with both OS-level (FreeBSD jails, illumos zones, OCI-compliant containers) and hardware-level (bhyve, QEMU) virtualisation techniques.
- **Infrastructure:** Automation, orchestration, monitoring, observability, alerting, load balancing, high-availability, vulnerability assessment, and operating systems hardening.
- **Cloud Platforms:** AWS (EC2, ELB, EKS, ECS, S3, RDS, CloudWatch.)

EMPLOYMENT HISTORY

FreeBSD Project

Src and Ports Contributor

open source

Jan. 2021–Present

- Contribute to base system (src) focusing on code correctness, standards compliance, performance optimisation, and security hardening across core components.
- Contribute to system documentation and manual pages to improve technical clarity, accuracy, and developer experience.
- Maintain and improve multiple ports, ensuring compatibility and addressing build system issues.

SkunkWerks

Software Engineer

contract

Nov. 2023–Present

- Architecting and developing a secure, highly customisable CI/CD platform, optimised for high-performance systems execution and adaptable across diverse OS-level virtualisation environments, enabling robust and scalable core pipeline operations.

OMPFinex

Software Engineer, Site Reliability Engineer

full-time

Nov. 2023–Present

- Architected and delivered operator-centric CRM backend and multi-channel notification system in Go, processing millions of requests daily with deep integration to external platforms and identity services.
- Contributed to development of high-throughput blockchain transaction monitoring systems in Go, processing and analysing real-time data streams for trading platform operations.

- Designed and implemented critical system utilities in C, Rust, and Go, for operational workflows, monitoring, and low-level system integration.
- Managed multi-zone Kubernetes clusters across multiple cloud providers, ensuring high-availability with automated failover and load balancing.
- Led architectural design discussions and code reviews, establishing standards for code quality, style, security, and maintainability.
- Mentored Go team developers and conducted technical interviews, contributing to hiring decisions, onboarding new employees, and uplifting engineering culture and standards.

illuria Security

Software Engineer, Site Reliability Engineer

full-time

Jan. 2022–Jun. 2023

- Led infrastructure and release engineering teams, architecting deployment systems for customer environments with focus on reproducibility and zero-trust principles.
- Engineered automated FreeBSD distribution build system with custom package repository and delivery pipelines.
- Developed performance monitoring and system utilities in C and Rust, leveraging DTrace for deep system observability and bottleneck analysis.
- Architected and deployed comprehensive CI/CD pipelines with security scanning, automated end-to-end testing, progressive rollout strategies, and heavily customised execution environment.
- Optimised large-scale FreeBSD jail orchestration, improving update efficiency and deployment speed.

Khallagh Borhan

Software Engineer

full-time

Mar. 2021–May. 2021

- Architected and implemented high-performance DDoS mitigation system in C++, providing real-time traffic analysis and automated threat response.
- Developed kernel-level network monitoring solution using Berkeley Packet Filter (BPF) and Netmap framework in C, achieving line-rate packet processing.
- Optimised network stack and application performance through profiling and systems-level tuning whilst ensuring security and reliability.

Software Engineer, Site Reliability Engineer

Jan. 2019–Feb. 2021

- Architected and delivered Platform-as-a-Service (PaaS) solution, enabling both internal teams and customers to rapidly deploy and scale applications.
- Developed custom Kubernetes cluster management and automation tools, streamlining operations and reducing manual intervention.
- Reduced deployment times by 70% through CI/CD pipeline optimisation and intelligent caching strategies, eliminating vendor lock-in and enabling faster and more reliable deployments.
- Improved performance of a public video streaming platform by 80% through complete infrastructure redesign, architectural optimisation, and refactoring of legacy Java code.
- Identified and resolved critical memory leaks in core services, reducing memory footprint by 75% and eliminating cascading failures.
- Utilised OS-level virtualisation techniques with distributed storage backend, improving deployment flexibility and resource utilisation.
- Contributed to the internal Infrastructure-as-a-Service (IaaS) and Content Delivery Network (CDN) solutions, diagnosing and resolving complex system-level issues, improving system availability and reliability.

Emersun

Software Engineer, Site Reliability Engineer

full-time

Dec. 2017–Mar. 2019

- Architected and built complete production infrastructure from scratch using FreeBSD jails, bhyve, and ZFS, with focus on security, scalability, and operational sustainability.
- Automated large-scale, declarative infrastructure and service orchestration with Terraform and Nomad, facilitating infrastructure management and service deployment at scale.
- Engineered comprehensive monitoring, alerting, and observability systems with custom tooling, providing real-time visibility into system health, performance metrics, and capacity planning.
- Optimised ZFS storage subsystem with deduplication, compression, and L2ARC/ZIL tiered caching, improving I/O throughput by 40%.
- Contributed to Java application codebase and database design, collaborating with development team on architectural decisions.
- Mentored engineering team members and participated in technical hiring, evaluating candidates and contributing to team growth.

VOLUNTEER WORK

- Organised *Iran BSD User Group (IRBUG)* (*April 2019–January 2021*)
- Translated *HTTP3-Explained* to Persian