

Salman Alghamdi *Software Engineer*

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Professional Experience

Software Engineer

Entropy - entropy.sa [↗](#)

04/2025 – Present

Riyadh, Saudi Arabia

- Owned **developer experience** for the engineering team, standardizing local environments, internal tooling, and deployment workflows.
- Architected **GitOps workflows** on AWS EKS using **ArgoCD**, enforcing declarative cluster state with automated reconciliation and full audit trails across environments.
- Reduced CI/CD pipeline runtime from 50 to 7 minutes** through layer caching, parallelization, and build optimization.
- Deployed and managed **stateful applications** in the cluster using Kubernetes operators, including CNPG (CloudNativePG) for production-grade database management.
- Set up a **Tailscale VPN mesh** and deployed a **custom internal DNS** layer so team services are accessible by FQDN across all development environments.
- Deployed **HashiCorp Vault** for secrets management with centralized storage, dynamic credentials, and policy-based access control. **Built an internal developer tool** for quick, scoped secret access during local development and testing.
- Implemented **NGINX Gateway Fabric** as the cluster ingress layer, configured to route and secure external traffic with rate limiting, timeouts, managing idempotent resources, and a caching layer for authentication and frequently accessed resources.
- Designed and deployed internal **AI agent infrastructure** to automate software development workflows, enabling autonomous coding agents to run securely with **scoped credentials** and **task-based execution**.

Education

King Saud University

Computer Science - Bachelor Degree

08/2023 – 08/2027

Riyadh, Saudi Arabia

Projects

Scratch2C [↗](#)

github.com/cipherat/scratch2c

04/2026 – 04/2026

Compiler toolchain that parses MIT Scratch 3 (.sb3) projects, builds an intermediate representation, performs type inference, and emits clean C source for two targets: **standalone userspace binaries** or **Linux kernel modules**. Covers compiler fundamentals: parsing, IR design, type systems, and multi-target code generation.

Blogger [↗](#)

blog.cipherat.com

12/2025 – 12/2025

Zero-JS blog engine **built in Go**: Markdown with YAML frontmatter, file watcher, rsync publish from Obsidian, custom analytics (scroll depth, time-on-page). Deployed behind **Apache2** via **systemd** on a **self-managed server**.

FTC Operating System [↗](#)

github.com/cipherat/ftcos

03/2024 – 03/2024

Built a bare-metal operating system from scratch. Covers **bootloader** and **kernel** initialization, **memory management** (allocation and resource handling), and **VGA video output** for direct framebuffer rendering.

Contributions

Linux Kernel [↗](#)

04/2026 – Present

Contributor

- Fixed unsigned integer underflow in rtl8723bs Wi-Fi driver (rtw_mlme.c) by adding bounds checks before ie_length subtraction, preventing potential memory corruption on malformed beacon frames; cc'd stable@vger.kernel.org [↗](#) for backport
- Fixed buffer over-read in rtw_update_protection() caused by passing full ie_length after advancing the ies buffer pointer; patch part of an 8-patch series reviewed and acked by Greg Kroah-Hartman

Patches: lore.kernel.org/linux-staging [↗](#)

Skills

Cloud & Infrastructure

- AWS · Kubernetes · Docker

DevOps

- CI/CD · GitOps · Github Actions · ArgoCD

Networking

- Nginx · Tailscale · CoreDNS · WireGuard

Systems

- Distributed Systems · *Unix Servers

Programming

- C · Python · Go · x86 Assembly

Languages

Arabic

Native

English

Academic IELTS 6.5