

SAMI BOU KHALED

Computer Science Student

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🌐 [linkedin.com/in/samibk](https://www.linkedin.com/in/samibk) 🐙 github.com/simenzzz 🌐 Portfolio

SUMMARY

Computer Science graduate (GPA 3.81/4.00, Class of 2026) with experience across the full stack and the systems beneath it, including production Rust services, distributed pipelines, applied ML and security research, and deployed web applications in Python, TypeScript, and Java. Seeking a new-grad software engineering role; open to remote work and relocation.

EDUCATION

BS, Computer Science Lebanese American University, Beirut, LB	GPA: 3.81 2023 – 2026
French Baccalaureate (Scientific) Collège Élysée, Beirut, LB	2021 – 2023

WORKING EXPERIENCE

Data Analyst <i>MaidsCC - Dubai (Remote)</i>	June 2024 – November 2025
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- I wrote and optimized SQL queries and used Tableau's powerful features, including calculated fields, filters, and dynamic visualizations, to analyze and present data.
- I worked on the alerting system project by designing and implementing automated notifications based on specific data triggers. My role involved integrating real-time data insights to ensure timely alerts for stakeholders, enhancing operational efficiency.

PROJECTS

Deckgraph github.com/simenzzz/Deckgraph
TypeScript, Node.js, web-tree-sitter (WASM), Babel, React 19, Vite, pnpm/Turbo

- Installable CLI (`npx deckgraph`) and VS Code extension unifying dependency graphs across five ecosystems (npm, PyPI, Go, Cargo, Maven) under one adapter abstraction, with confidence-scored cross-language edge detectors (gRPC/proto, FFI, OpenAPI, build, config) and license-violation flagging.
- Zero native dependencies: JS/TS parsed via Babel, other languages via WebAssembly tree-sitter; lazy three-phase analysis with incremental watch-mode (xxhash content dedup) and a live React dashboard over layered, filterable views.

Tideway github.com/simenzzz/tideway
Rust, Tokio, DTN/BPv7, rateless IBLT, CRDTs (OR-Set/LWW/RGA), Ed25519 + AES-GCM, ffall LSM

- High-throughput Rust edge-to-cloud telemetry pipeline (14–17M samples/s) with durable offline buffering on a pure-Rust LSM and rateless-IBLT set reconciliation (~93 bytes per differing record, estimate-free).
- Three-tier federation over a delay-tolerant (BPv7) transport with Ed25519 bundle signing and AES-256-GCM, CRDT control-plane state (OR-Set / LWW / RGA), and FedDrift drift detection tolerant to node dropout.

Lucubrum github.com/simenzzz/lucubrum
TypeScript, Express, Python, FastAPI, Pydantic v2, Postgres (Supabase), Redis (Upstash), React

- Two-service platform (Express orchestrator + FastAPI curriculum service) generating DAG-structured

learning roadmaps with prerequisite-validated nodes (cycle, reference, and schedule checks), ranked YouTube resources, and mastery-adaptive, LLM-graded exercises across five question types.

- Every LLM output schema-validated (Pydantic v2 in Python, AJV at the Node boundary) with retry logic, per-artifact audit metadata, and config-swappable providers (Gemini / Claude / Zai); hierarchical Redis-to-Postgres caching with MCP-based staleness detection.

Cove

github.com/simenzzz/cove

Rust, Axum, Tokio, SurrealDB (graph), Redis, Yrs (CRDT), SvelteKit, Docker / Caddy

- Tokio room-actor WebSocket protocol with Redis-backed per-channel sequence numbers for gap-aware resume (event replay or full resync), single-use 30 s WebSocket tickets, and Argon2 auth with rotating refresh tokens.
- Graph-native social discovery (follows, friends-of-friends) via SurrealDB edge traversal; unified CRDT collaboration through Yrs (Rust Yjs port) for documents, whiteboards, and synchronized watch rooms; repository-trait architecture with Prometheus metrics.

MVCCP: Multi-hop VANET Charging Coordination Protocol

github.com/haidar88/Capstone

Python, C++, ns-3 (802.11p WAVE PHY/MAC), SUMO + TraCI, cppyy, QoS-OLSR Team capstone

- Decentralized four-layer protocol (neighbor discovery → MPR-forwarded provider advertisement → charging negotiation → platoon coordination) with dynamic platoon-head election and adaptive multi-hop TTL forwarding for in-motion wireless EV charging across a VANET.
- SUMO + ns-3 co-simulation orchestrator bridging discrete 0.5 s mobility steps with sub-step 802.11p WAVE PHY/MAC packet events (20 dBm, 5.9 GHz), plus Dijkstra edge-graph optimization for lowest-loss energy-transfer paths.

Movies Application

Java, Spring Boot, JPA, MySQL, React, Docker

- Full-stack movie catalog: Spring Boot REST API (JPA/MySQL persistence, Swagger-documented endpoints) with a React + Vite frontend, fully containerized via Docker Compose.

RESEARCH

V2G Anomaly Detection

2026 · 2-person team

github.com/simenzzz/IntroML

Python, PyTorch, Transformers, SHAP, scikit-learn

- Multi-modal transformer (4 layers, $d=128$, 8 heads) fusing host (16k-dim) and network (2.7k-dim) event tokens for five-class EVSE attack detection (Benign, Recon, DoS, Backdoor, Cryptojacking) on CICEVSE2024 under strict session-level holdout.
- Achieved **90.30% accuracy**, **0.695 macro-F1**, and **0.918 macro-AUC**; SHAP explanations across 18,944 attribution dimensions for analyst-facing evidence.

Uncertainty-Routed 3-Tier WAF

2026 · Solo

github.com/simenzzz/WAF

Python, PyTorch, char-BiLSTM, Mondrian Conformal Prediction, Integrated Gradients, FastAPI

- Three-tier cascading WAF: ReDoS-safe regex screening → temperature-calibrated char-BiLSTM router ($\tau=0.084/0.184$) → per-endpoint Mondrian conformal specialist trained on the uncertain slice.
- Reached **0.972 F1** on CSIC2010, escalating only **3.04%** of requests to Tier 3 (FNR 0.022); an Integrated-Gradients saliency loop synthesizes new regex rules validated against a benign holdout.

TECHNICAL SKILLS

Languages	Python, Rust, Java (Vanilla, Spring Boot), JavaScript (Vanilla, React), TypeScript, SQL, HTML/CSS
Frameworks	Django, FastAPI, Node.js, React, SvelteKit, Spring Boot, Spring Data JPA, Axum, Swagger/OpenAPI
Tools	Claude Code / OpenAI Codex, Git/GitHub, Docker / Docker Compose, Tableau, Jira, Microsoft Suite

SOFT SKILLS

- Analytical Problem Solving
- Consistency
- Team Coordination & Collaboration

ACTIVITIES

- Member of the Chess Club at LAU.
- Helped with organizing activities with the Beirut Community Center NGO.
- Tutored students for the introductory computer science course at LAU (CSC243: Introduction to Object-Oriented Programming).