Zahi Touqan

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Experience

STACKIT (Schwarz Group) **Heilbronn, Germany**
Software Engineer, Cloud Networking **OCT 2024 – PRESENT**

- Develop and operate STACKIT's **VPC networking product** in Go, now running **50+ VPCs in production**, implementing VPC lifecycle, routing, IAM authorization, OpenStack provisioning, and multi-region rollout.
- Designed the OVSDB schema and built the proof of concept for a Go control plane that writes network policy directly to OVN, adding routing and ACL features Neutron could not express and replacing full recomputation with reconciliation. Shipped to two regions in **four months**, adopted by **two engineering teams**; work presented at **OVSCon 2025**.
- Helped design and launch STACKIT's private connectivity service, linking customer datacenters to STACKIT's cloud and replacing **several days of manual coordination** with an automated workflow; now **leading its integration with VPCs**.
- Take rotating on-call for the production network stack, debugging Kubernetes, OpenStack, and OVSDB failures; **restored Raft quorum** in one incident and fixed **lock contention** and **connection-pool exhaustion** in the API stack.

IO Health **Ramallah, Palestine**
Backend Development Intern **JAN 2024 – APR 2024**

- Migrated Java microservices to a non-blocking Quarkus architecture, **increasing throughput 10x**.
- Built an OpenID Connect user-management service with Spring Boot, Keycloak, and GraphQL.

Technical University of Munich **Munich, Germany**
Student Assistant, Introduction to Software Engineering **OCT 2022 – AUG 2023**

Selected Projects

Insurance Accident Management System **JAN 2026 – PRESENT**
Sole engineer, commissioned

- Built and operate a full-stack claims platform deployed on the client's domain. It has processed **roughly 1,200 claims** and tracks around **€2M in commitments**. Next.js, TypeScript, Supabase, Cloudflare Workers, R2.

Law Firm Management System **FEB 2025 – PRESENT**
Primary engineer, independent project

- Built a full-stack platform for managing cases, consultations, corporate and IP matters, and clients, **now piloting with a law firm**; refining its workflows with the lawyers. Go, Next.js, TypeScript, PostgreSQL, Zitadel, AWS.

Education

Technical University of Munich **Munich, Germany**
MSc in Informatics (alongside full-time employment) **APR 2025 – SEP 2027 (EXPECTED)**
*Guided Research with **Prof. Stefanie Jegelka's group**:*
Invariance-Aware Post-Training of LLMs for Graph Reasoning

Technical University of Munich **Heilbronn, Germany**
BSc in Information Engineering. Grade: 1.8 **OCT 2021 – SEP 2024**
***2nd of 46 students**; Algorithms and Data Structures: 1.0*
*Thesis (**1.0, highest**): Extracting Explanatory Rationales of Activity Relationships using LLMs; **published at WI 2025***

Research and Awards

One State Store for Retrieval and Generation: A Frozen Encoder-Decoder Study of Symmetric Latent RAG **2026**
TUM seminar paper, co-author ***Code***

- Co-developed RAG on a frozen T5Gemma2-4B that reuses **one cached passage state** for retrieval, reranking, and generation. With no separate retriever, it nearly matched BGE (**49.4 vs. 52.5 F1**) and equalled it once the right passage was found.

Winner, AWS DeepRacer Competition, Germany **2024**
Autonomous racing competition by AWS, XL2, and Audi

- Developed and tuned Python reinforcement learning reward functions for autonomous racing, placing **first nationally and eighth globally** at the AWS re:Invent 2024 World Finals.

Technical Skills

- **Languages:** Go, Java, Python, TypeScript, SQL.
- **Networking:** OVN/OVS, OVSDB, BGP, VLANs, IPv6, policy-based routing.
- **Systems & Cloud:** Kubernetes, OpenStack, Raft, Linux, Docker, Terraform, AWS, Cloudflare Workers.
- **Backend & Data:** gRPC, OpenAPI, PostgreSQL, MariaDB, RabbitMQ, SpiceDB, Spring Boot, Quarkus, Next.js, React.
- **ML:** PyTorch, PyG, Transformers, vLLM, Unsloth, LightGBM.
- **Spoken Languages:** Arabic (native), English (fluent), German (conversational).