OMAR HAMMOUD

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Portfolio Website — Github Profile — LinkedIn Profile

EDUCATION

Swiss Federal Institute of Technology (ETH Zürich) *Zurich, Switzerland*
Master of Science in Computer Science, Data Management *Sep. 2024 - Aug. 2026 (expected)*

Swiss Federal Institute of Technology Lausanne (EPFL) *Lausanne, Switzerland*
Bachelor of Science in Computer Science *Sep. 2021 - Aug. 2024*

• **Relevant Courses:** Algorithms, Big Data, Data Management Systems, Software Engineering, Cloud Computing Architecture, Multiprocessor Architecture, Network Security, System Security, Applied Cryptography, Probability and Statistics, Machine Learning

EXPERIENCE

• **Teaching Assistant - ETH Zurich** – [Zurich, Switzerland] *Feb. 2025 - Present*
Supported students in the Databases course by preparing and explaining exercises. Assisted participants in the Software Engineering course with project work through lab sessions and office hours.

• **Web Developer - Htech** – [Beirut, Lebanon] *Jul. 2024 - Oct. 2024*
Began as an intern and later continued as a remote part-time developer, contributing to client projects from development through delivery, across frontend (React) and backend (.NET).

• **Teaching Assistant - EPFL** – [Lausanne, Switzerland] *Sep. 2023 - Jun. 2024*
Supported students in the Computer Architecture and Digital Systems courses by clarifying complex concepts, guiding lab sessions, and helping them solve exercises.

PROJECTS

• **FeedMe:** [Kotlin] A mobile app developed with 6 classmates that lets users find, share and create recipes, follow friends, and others. Used Google Firebase for backend data management.

• **LikingNodes:** [JavaScript, Python] A web application where users can add and like nodes on a graph. Used FastAPI to handle requests, and WebSockets for updates across active sessions.

• **JobsOnCloud:** Evaluated static and dynamic schedulers for memcached and PARSEC workloads on Google Cloud, optimizing batch completion while meeting tail latency service-level objectives.

• **OptTSVQ:** [C] Optimized an existing texture synthesis algorithm using loop unrolling, scalar replacement, memory aliasing, and SIMD translation. Profiled performance using VTune.

• **SQLiteFuzz:** [Python] A coverage-guided fuzzer for SQLite with differential testing, using `sqlglot` for SQL parsing and AST construction; and a SQL query reducer to minimize test cases.

• **Bicycle Pathfinder:** [Java] A bicycle pathfinder with OpenStreetMap and JavaFX. Calculates the most efficient route using Dijkstra's algorithm (distance, elevation, bird's-eye view).

• **Unix v6 Filesystem:** [C] A simplified version of the Unix v6 filesystem of the 1970s, constructed the skeleton of the system through a hierarchy of layers: sector, mount, inode and directory.

• **Snake:** [Assembly, VHDL] Snake minigame coded on a Gecko4Education Board. Programmed the FPGA to manage game logic, input handling, and screen output (LEDs).

SKILLS

• **Programming Languages:** Java, C/C++, Python, Go, JavaScript, Scala, Kotlin, Assembly, VHDL, Verilog, SQL, C#, TypeScript, HTML, CSS

• **Technologies:** Git, Docker, Kubernetes, CI/CD, ReactJS, FastAPI, Android Development, Google Cloud, PySpark, JSONiq, CUDA, Dynamic Programming

• **Hobbies:** Ski, Running, Golf, Gym, Tennis, Biking, Swimming

• **Languages:** Fluent in French, English and Arabic (native). Beginner in German