

Omar Khodr

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Professional Experience

Google, Zurich, Switzerland

SOFTWARE ENGINEER III, YOUTUBE SHOPPING: QUALITY & INFRASTRUCTURE

APRIL 2025—PRESENT

- Designed and implemented the migration of a core C++ backend service to YouTube's proprietary recommendations framework.
- Led and scoped a multi-quarter project for increasing coverage of a product clustering model for APAC markets and languages. Implemented an end-to-end data mining and injection pipeline that leverages an agent framework for large-scale LLM inference and context injection
- Prototyped and evaluated the quality of a model that classifies product search queries by measuring similarity using text embedding distance

SOFTWARE ENGINEER II, YOUTUBE DEVELOPER INFRASTRUCTURE

JUNE 2022—APRIL 2025

- Designed and implemented the first version of the Chrome Developer Tools extension for Google's Wiz web framework
- Developed core testing APIs along the Critical User Journeys (CDJs) for YouTube's web unit tests and UI tests
- Designed and implemented Hot Module Replacement (HMR) support in local development environments, with ~5 second p50 edit-refresh latency and **p99 50 millisecond latency** in playground environments
- Designed and implemented various assistive coding features to reduce context-switching by integrating tooling into the editor (one-click start for development environments, autocomplete suggestions for importing modules)

Google, Paris, France

June 2021—September 2021

SOFTWARE ENGINEERING INTERN

- Built an internal debugging dashboard for Google Cloud's Managed Instance Groups (MIGs) that provides insights into VM instance actuations
- Designed and implemented a redesign of a Truth library extension for managed instances by building a generic and fluent assertion model that increases modularity and extensibility while reducing code redundancy

American University of Beirut, Beirut, Lebanon

January 2019—May 2019, January 2020—May 2020

PROGRAMMING LAB TEACHING ASSISTANT

- Supported students and lab instructor as a teaching assistant for a Python programming lab

Euro System Arabia, Riyadh, Saudi Arabia

December 2019—January 2020

SOFTWARE ENGINEER INTERN

- Developed a database application for querying an alarms database protecting critical sites at the national railway company (Saudi Railway Company), and refactored the legacy system by making it modular and extensible

Education

American University of Beirut, Beirut, Lebanon

September 2018 — May 2022

BE IN COMPUTER AND COMMUNICATIONS ENGINEERING (FOCUS: COMPUTER SCIENCE AND ENGINEERING)

GPA: 87.81

Projects

Sonic Physics Recreation (Github)

September 2024—January 2025

- Built a fully working implementation of Classic Sonic physics in C++
- Implemented a custom sprite animation system, tile map parsing, slope physics and collisions from scratch, using only the lightweight graphics library Raylib

What Do You Think?

September 2021—May 2022

- Developed the server-side backend of an anonymous polling application that queries a sample of the population, then sends them user-generated polls through SMS messages to gauge public opinion
- Implemented homomorphic encryption to perform operations directly on the encrypted poll answers, then decrypt the aggregate poll result without ever revealing the individual answers

Python Interpreter (Github)

March 2020

- Wrote a context-free language to parse and compute Python list operations
- Implemented using the ANTLR Java library by writing a lexer to break down the code into tokens and a parser to validate statements and execute the corresponding Java business logic

Skills

Domains	Server Development, Parallel Computing, Data Science, Web Development
Programming Languages	C/C++, TypeScript/JavaScript, SQL, Go, Swift, Java, Python, Scala
Tools and Frameworks	UIKit, SwiftUI, Spring Boot, ANTLR, PostgreSQL, gRPC, MATLAB, Git, Linux
Languages	Fluent in English, French and Arabic