



Fatima Navarro

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EDUCATION

Universidad del Valle de Guatemala (UVG) Guatemala City
Engineering Degree in Computer Science and Information Technology *Expected 2029*
Relevant Coursework: Theory of Computation, Quantum Computing, Computer Graphics, Databases, Software Engineering, Human-Computer Interaction, Web Systems, Numerical Methods

EXPERIENCE

Math Learning Platform for Mineduc, Social Extension Project Guatemala
Software Developer 2026

- Developing a React web platform that teaches math to first-grade students at a rural school, for Guatemala's Ministry of Education (Mineduc).
- Redesigned the interaction model for children who cannot yet read and have short attention spans.

AgroConecta, Software Engineering Project UVG
Scrum Master 2026

- Led a Scrum team through nine sprints, facilitating planning, stand-ups, reviews and retrospectives and tracking work in Jira; the team completed 100% of the product backlog.
- Designed the PostgreSQL database for the agricultural marketplace app.

Prochem S.A. Guatemala
Video Editing Intern 2022–2023

- Edited and produced video content for company projects, from raw footage to final export.

PROJECTS

Ray Tracer | *Rust, raylib* 2026

- Building a ray tracer from scratch in Rust for Computer Graphics, rendering a custom stylized 3D scene.
- Previously built a real-time raycasting maze game with raylib in the same course.

Regex-to-Automata Compiler | *Python, Graphviz* 2026

- Built a pipeline that converts regular expressions into minimized DFAs using Shunting Yard, Thompson's construction, subset construction and DFA minimization, with Graphviz visualizations.
- Extending it to CFG-to-Chomsky Normal Form conversion and a CYK parser that outputs parse trees.

Inventory and Sales System | *Node.js, Express, PostgreSQL, Prisma, React, Docker* 2026

- Developed a full-stack system with role-based access, stored procedures and triggers, integrated through the Prisma ORM and containerized with Docker.

E91 Quantum Key Distribution | *Python, Qiskit* 2026

- Implemented the Qiskit simulation for a group project on the E91 protocol, including entangled-pair generation and eavesdropper detection.

UVG Market | *Kotlin, Jetpack Compose, Firebase*

- Built an Android app connecting local vendors and customers in the UVG community, using Firebase as the backend.

Personal Portfolio | *Next.js, Tailwind CSS* fatiplace.com

- Designed and developed my personal portfolio site to showcase my projects, with a custom responsive interface.

SKILLS & LANGUAGES

Programming: Python, Kotlin, Rust, Java, JavaScript/TypeScript, SQL

Frameworks & Tools: React, Next.js, Node.js, Express, Jetpack Compose, Firebase, PostgreSQL, Prisma, Docker, Qiskit, Git/GitHub, Linux, LaTeX

Other: CUDA, IoT (ESP8266), Figma, Photoshop, Procreate, AI-assisted development (Cursor, Claude, Copilot)

Languages: Spanish (native), English (bilingual, C1+)