

JUAN ESTEBAN ÁLVAREZ GARCÍA

Systems and Computing Engineering | Software Development · Cloud/DevOps · Applied Security

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Available January 2027 · Full-time · On-site or hybrid in Bogotá

PROFESSIONAL SUMMARY

Trilingual Systems and Computing Engineering student at Universidad de los Andes (GPA: 4.2/5.0), completing final coursework and an undergraduate thesis. Hands-on experience designing, building and deploying full-stack software, automating workflows, and using cloud services on GCP and AWS. Particularly interested in cryptography, defensive cybersecurity, backend/frontend engineering, algorithm optimization, DevOps and applied AI. Experienced in agile and multicultural teams, applying software architecture, testing, Design Thinking and user-centered problem-solving to build functional solutions. Bring analytical thinking, initiative, effective communication and collaborative leadership, supported by academic exchange experience in Germany and certified C1 English proficiency.

EDUCATION

Universidad de los Andes | B.Sc. in Systems and Computing Engineering Jan. 2022 - present · Expected graduation: 2027 · GPA: 4.2/5.0

Relevant coursework: Cryptographic Engineering and IT Applications; Quantum Computing and Cryptography; Quantum Computing Algorithms; Computer Infrastructure; Design and Analysis of Algorithms; Machine Learning Fundamentals; Team Software Development; Mobile Application Development; Cloud Software Development; DevOps and Continuous Deployment.

Hochschule München | Academic Exchange Munich, Germany · Feb. - Jul. 2025 · 17 ECTS. Software Engineering, Blockchain, Human-Computer Interaction and eye-tracking UX; international team collaboration.

Additional training: Google GEAR Academy (ongoing).

TECHNICAL SKILLS

Languages: Python, Java, TypeScript, SQL, Dart.

Frontend & mobile: Next.js (React), Angular, Flutter, Tailwind CSS, Swing.

Backend & APIs: FastAPI, Spring, Django, Flask; REST API design and integration.

Cloud (GCP / AWS): Cloud Run, Compute Engine, Cloud SQL, Cloud Storage, IAM, Artifact Registry, BigQuery; EC2, ECS/Fargate, Elastic Beanstalk, S3, RDS/Aurora, ELB, Secrets Manager, CloudWatch, CodeBuild and CodePipeline.

DevOps & tooling: Git, GitHub Actions, CI/CD, Docker, Docker Compose, Linux, Nginx, Jenkins, SonarQube, SSH.

Data, AI & security: PostgreSQL, MySQL, MongoDB; Keras, Machine Learning; AES, RSA, TLS, JWT, Argon2id, HMAC, ZKP/LWE, Kyber and ECDSA.

Engineering & methods: Software architecture, data structures, Big O analysis, algorithm optimization, automated testing, Agile/Scrum, Design Thinking, ER modeling, TCP/IP, UDP, DNS and networking.

INTERPERSONAL SKILLS

Analytical problem-solving · Clear cross-cultural communication · Teamwork and leadership · Teaching and mentoring · Ownership and initiative · Adaptability and user empathy.

EXPERIENCE

Teaching Assistant | Universidad de los Andes | Jan. 2026 - present

- Support ~30 students in IT Product Design and Innovation through assessment, in-class Q&A, supplementary workshops and creation of learning materials.

Freelance Software Developer | Jul. 2024 - Jan. 2025

- Automated data extraction and entry for hundreds to thousands of hotel bookings per run using Python/Selenium, cutting approximately one week of repetitive work to one day.
- Designed and deployed a dental practice website (Next.js, Tailwind CSS, Netlify) with WhatsApp CTA and contact form; helped attract an estimated 2-3 new clients monthly over the past 3 months.

Private Programming Tutor | Jan. 2022 - present

- Tutored ~20 students in programming, OOP, data structures and algorithms; designed practice exercises and led 1:1 sessions and groups of up to five.

SELECTED PROJECTS

Thesis | Post-Quantum Zero-Knowledge Authentication

Python · SageMath · LaTeX · Ongoing research | [Repository](#)

- Co-designing a quantum-resistant Zero-Knowledge authentication protocol based on Learning with Errors (LWE); leading the LWE mathematical component.
- Completed theoretical framework; developing benchmarks for runtime, memory, network traffic and estimated security strength in bits.

AndeSpace | University Space Booking App

Flutter · FastAPI · PostgreSQL · GitHub Actions | [Flutter](#) · [Backend](#) · [Wiki](#)

- Owned end-to-end search, home, booking and profile/friends features, integrating mobile UI, API and data layer.
- Awarded Best Project in its Mobile Application Development section; used SonarQube for code quality checks.

HabiCapital | Secure Digital Banking Simulation

Python · FastAPI · Next.js · PostgreSQL · Docker | [Code](#)

- Individually designed and built a P2P platform with applied security: JWT, Argon2id, AES-256-GCM, HMAC, immutable ledger and idempotency.
- AI-assisted specification-driven development (SDD) and TDD; 100+ passing automated tests and ~94% reported code coverage.

Teaching Assistant Tracking Platform | Cloud

GCP · GitHub Actions · CI/CD

- Co-developed a weekly progress-tracking platform for faculty and teaching assistants, using Cloud Run, Compute Engine, Cloud SQL, Cloud Storage, IAM and Artifact Registry.

Email Blacklist Microservice | DevOps

AWS · GitHub Actions · CI/CD

- Collaborated on a microservice with automated integration and deployment workflows, using ECS/Fargate, RDS, CloudWatch, CodeBuild and CodePipeline.

AhorraApp | Personal Finance for University Students

Angular · Digital Product · UX Research | [Frontend](#) · [Backend](#) · [Landing](#)

- Built the functional application and contributed to interviews, JTBD/ICP definition, user feedback cycles and product validation; awarded Best Project in its section.

DogSPA | Location and Services Management

Angular · Spring · MySQL

- Built end-to-end city/location and service-catalog modules with frontend-backend integration; awarded Best Final Project in Team Software Development.

AWARDS & LEADERSHIP

Best Project awards in Product Design, Mobile Applications and Team Software Development; two runner-up awards in Design and Analysis of Algorithms; Data Structures Hall of Fame (2022). Former co-representative of the university calisthenics team (tournament and activity organization, 2022-2024).

LANGUAGES

Spanish: Native · English: C1 (IELTS General Training 7.5, 2025) · German: B1 (everyday conversation).