

Alejandro Guatibonza Briceño

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Software engineer with hands-on experience in Backend-Frontend development, cloud-native technologies. Proficient in Python and frameworks like Flask, Vue, PHP, Angular, FastAPI, and Django. Experienced with containerized environments and cloud platforms (AWS, Azure). At IBM, contributed to mission-critical solutions for banking and financial clients (Bancolombia), ensuring high availability and security under demanding workloads. Solid background in CI/CD, MQ systems, and scalable architectures. Passionate about solving complex problems using efficient algorithms and data structures.

Application developer

IBM

August 2024-Present

Technologies: Python, AWS (EKS, EC2, VPCs) , MQ, Azure Pipelines, Kubernetes, Docker, HAProxy, TLS

- Migrated IBM MQ queue managers from OpenShift to Amazon EKS for a Bancolombia project, deploying with custom YAML and automating rollout via Azure Pipelines.
- Configured TLS certificates, secured channels, and HAProxy rules to enforce encrypted communication and block insecure traffic outside the EKS cluster.
- Enabled clustered MQ communication, ensuring queues created in one manager were accessible across all queue managers for seamless service integration.

Intern

IBM

January -July 2024

Technologies: Python, Vue3, Typescript, Langchain, FastAPI, Kubernetes, Docker, RAG, Kafka, Tekton, Github actions

- Created automated CI/CD pipelines for continuous delivery, significantly reducing feature deployment times.
- Implemented an AI solution utilizing Retrieval-Augmented Generation (RAG) and Prompt Engineering to handle and interpret IBM MQ error logs, providing automated problem-solving capabilities with high accuracy.
- Integrated LLM-based solutions with existing enterprise APIs and cloud-based platforms, ensuring seamless operations and optimal performance.

Teaching Assistant

University of the Andes

2021,2022, 2023

Technologies: Java, Python

- Taught sorting algorithms, dynamic programming, graph theory, NP completeness and python essentials

Projects:

AI-Powered Chatbot Tutor

University of the Andes

August-december 2024

- Developed an AI-driven educational chatbot using GPT-4, LangGraph, and Streamlit, integrated into the Universidad de los Andes platform.
- Optimized response accuracy, achieving over 90% user satisfaction through real-world testing.
- The project was accepted as a short paper at the **International Conference on Intelligent Tutoring Systems (ITS 2025)**, recognizing its contribution to AI-assisted education.

Stock Analysis System

University of the Andes

July 2023 – December 2023

- Built a full-stack stock analytics platform using Golang, Vue 3 with TypeScript, and CockroachDB, featuring API integration, real-time data ingestion, and a responsive UI.
- Developed a recommendation engine that analyzes historical trends to suggest top stocks daily, with optional deployment via Terraform and unit-tested components.

Achievements:

- Qualified for the Latin American Programming Marathon after placing among the top 20 teams in Colombia.

Education:

University of the Andes (2020-2024)

B.Sc. in Systems and Computing Engineering – GPA: 4.4 / 5.0.

Recipient of the *Quiero Estudiar* scholarship, a merit- and need-based program supporting high-achieving students

Courses: Data structures, algorithm design and analysis, OOP in java, databases, software architecture and design.