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, 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, 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-december2024

* 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.