## Alejandro Sánchez Yalí

## Python Developer | Full Stack Engineer

LET'S CONNECT

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#### SUMMARY

AI/ML Engineer with unique combination of Master's in Pure Mathematics and 6+ years of production software development. Creator of viral AI Avatar projects with 320+ GitHub stars. PyCon Colombia speaker in 2024 on machine learning parallelism strategies. 11 years teaching Mathematics at Universidad de Antioquia, including AI/ML curriculum development. Specializes in mathematical foundations of AI systems, from theoretical understanding to production implementation using Python, JavaScript/TypeScript, and modern cloud infrastructure.

### TECHNICAL SKILLS

- Languages: Python (advanced, 7+ years), JavaScript/TypeScript (5+ years), SQL, C, Rust
- Backend: Django, FastAPI, Flask, Node.js, RESTful APIs, GraphQL
- Frontend: React.js, Next.js, TypeScript
- AI/ML: TensorFlow, PyTorch, Scikit-learn, LangChain, LangGraph, LLMs, Whisper, JAX/Flax
- Data Engineering: ETL pipelines, data processing, web scraping (BeautifulSoup, ScrapeGraph, Selenium)
- Databases: PostgreSQL, MongoDB
- Cloud/DevOps: AWS, GCP, Docker, GitHub Actions, CI/CD pipelines
- Software Engineering: Clean Architecture, TDD, SOLID principles, Unit Testing, Version Control

### **EXPERIENCE**

# Full Stack Developer Monadical

Apr 2021 – Aug 2024 Remote, Canada/US

- Developed and maintained full-stack applications using Python (Django, FastAPI) and JavaScript / TypeScript (React.is, Next.is).
- Built scalable backend systems and RESTful APIs for AI/ML model deployment and data-intensive applications.
- Integrated large language models and AI services into production environments.
- Designed ETL pipelines and custom Django ORM extensions in Python.
- Created frontend interfaces for AI applications using React / Next.js and TypeScript.

## Independent IT Consultant

Aug 2024 – Present Remote

Free lance

 Delivered end-to-end software solutions for business applications using Python, FastAPI, Django, and React.js.

- Developed AI agents and technical English learning platforms leveraging Python and LLMs.

## $\begin{array}{c} \textbf{Full Stack Developer} \\ BCFort \end{array}$

Aug 2018 – Oct 2020 Medellín, Colombia

- Built backend solutions with Python (Django) and frontend with React.
- Led development of blockchain and data analytics solutions.

Managed cloud infrastructure on AWS, GCP, and IBM Cloud.

**Professor**Universidad de Antioquia

Jan 2010 – Oct 2021 Medellín, Colombia

- Taught Machine Learning and Data Science courses using Python, NumPy, Pandas, TensorFlow, and PyTorch.
- Mentored research projects and developed curriculum for mathematics and ML.

#### FEATURED PROJECTS

- Morpheus AI Image Generation Platform ☑
  - Full-stack open-source platform for AI image generation using Python, React, and stable diffusion models. Implemented RESTful APIs, ML model integrations, and cloud infrastructure with Docker and AWS.
- Zippy Interactive AI Avatar
  - Built a Next.js-based talking avatar integrating OpenAI API and Azure Cognitive Services. Developed TTS synthesis and seamless backend-frontend integration in Python and TypeScript.
- Digital Human Interactive AI Avatar (+ 320 Stars on Github )
  - Engineered a conversational AI system with OpenAI GPT, Whisper, and Eleven Labs. Implemented real-time data processing and lip synchronization.

### TECHNICAL BLOG POSTS

- Zero-Shot Text Classification (Sep 2024)
- Neural Networks as DAGs of Parameterized Computational Programs (Aug 2024)
- Revolutionizing Animation: Building Digital Humans with LLMs (Jul 2024)
- View more articles

### CONFERENCE TALKS

- Scaling Learning Models: Parallelism Strategies in JAX with Flax PyCon (2024)
  - Presented strategies for scaling machine learning models using JAX and Flax
  - Discussed parallel computing techniques for efficient model training

## **EDUCATION**

Master in Mathematics	Aug 2010 - Sep 2013
Universidad de Antioquia	$Medell\'in,\ Colombia$
B.Sc. in Teaching Mathematics and Physics	Jan 2004 - Oct 2009
Universidad de Antioquia	$Medell\'in,\ Colombia$