

# Alejandro Sánchez Yalí

Full Stack Software Developer | AI/ML

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## SUMMARY

I'm a Software Developer with over 5 years of experience creating robust and efficient solutions across frontend and backend applications. With a strong background in mathematics, I specialize in integrating emerging technologies into real-world projects to deliver innovative and impactful results.

## TECHNICAL SKILLS

- **Languages:** Python, JavaScript, TypeScript, Rust, C
- **Frontend:** React.js, Next.js
- **Backend:** Django, FastAPI, Flask, RESTful APIs
- **AI/ML Integration:** LangChain, LangGraph, ScrapeGraph, Whisper, LLMs, TensorFlow/PyTorch
- **Databases:** PostgreSQL, MongoDB
- **Cloud/DevOps:** AWS, GCP, Docker, GitHub Actions, CI/CD pipelines

## EXPERIENCE

### Full-stack Developer

*Monadical*

Apr 2021 – Aug 2024

*Remote Job - Canada/EEUU*

- Developed and maintained full-stack applications using Python, Django, and React, focusing on scalable architectures
- Built and integrated AI services for information retrieval using large language models
- Designed and implemented RESTful APIs for data-intensive applications

### Professor

*Universidad de Antioquia*

Jan 2010 – Oct 2021

*Medellín, Colombia*

- Taught advanced courses in Machine Learning, focusing on practical implementations with Numpy, Pandas, TensorFlow, PyTorch and Scikit-learn
- Mentored research projects in Category Theory and ML applications

### Full-stack Developer

*BCFort*

Aug 2018 – Oct 2020

*Medellín, Colombia*

- Led development of blockchain solutions with Ethereum and Hyperledger
- Managed cloud infrastructure on AWS, GCP, and IBM Cloud

## FEATURED PROJECTS

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- **Morpheus - AI Image Generation Platform** [↗](#)
  - Contributed to building a full-stack open-source platform for AI image generation using Python, React, and stable diffusion models
  - Implemented RESTful APIs and scalable architecture for handling ML model integrations
  - Developed infrastructure as code using Docker, Kubernetes, and AWS services
- **Zippy - Interactive AI Avatar** [↗](#)
  - Built a Next.js-based talking avatar using Azure Cognitive Services and OpenAI API
  - Implemented text-to-speech synthesis with synchronized lip movements using Azure's viseme generation
  - Created seamless integration between OpenAI's language models and Azure's speech services
- **Digital Human - Interactive AI Avatar** [↗](#)
  - Engineered a conversational AI system integrating Open AI GPT, Whisper, and Eleven Labs
  - Implemented real-time lip synchronization creating seamless human-AI interaction

## TECHNICAL WRITING


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- **Zero-Shot Text Classification** (Sep 2024)
  - Analysis of modern approaches to zero-shot learning in NLP
- **Neural Networks as DAGs of Parameterized Computational Programs** (Aug 2024)
  - In-depth exploration of neural networks from a differentiable programming perspective
- **Revolutionizing Animation: Building Digital Humans with LLMs** (Jul 2024)
  - Technical guide on implementing AI-powered digital avatars

[View more articles](#) [↗](#)

## CONFERENCE TALKS

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- **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

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<b>Master in Mathematics</b> <i>Universidad de Antioquia</i>	Sep 2013 <i>Medellín, Colombia</i>
<b>B.Sc. in Teaching Mathematics and Physics</b> <i>Universidad de Antioquia</i>	Oct 2009 <i>Medellín, Colombia</i>