

Alexei Alayo

Software Engineer

alexei.alayo@gmail.com
+53 5 5514514

Summary

- 9+ Years of experience as a Developer in Python, C# and others.
- Experienced in applied math, digital image processing, web apps and public cloud.
- Mathematics professor at university and researcher in artificial intelligence and pattern recognition.
- Problem solver and self-managed interested in the applications of math in software development and vice versa.

Technical Skills

Programming Languages	Python, C#, SQL, Bash, Powershell
Frameworks/Libraries	NumPy, Scikit-learn, PyTorch, pandas, Matplotlib ReactJS API REST, GraphQL
Databases	PostgreSQL, DynamoDB, CosmosDB, SQL Server
Operating Systems	Linux, OS X, Windows
Cloud	AWS: Lambda, CloudWatch, DynamoDB, SQS, SNS, SES, EC2, S3, IAM, Amplify, Api Gateway, Cognito, Boto3, Kinesis, IoT Core Azure: CosmosDB, Azure Functions, KeyVault, App Service, Container Apps, Azure DevOps, IoT Hub, Static Web Apps, Azure Storage, Active Directory, API Management Google Bigquery Heroku, Firebase
Tools	Git, GitLab CI/CD, Docker, Kubernetes, Terraform

Work Experience

Mar 2021 – now	Software Engineer, Python Developer at ENGADI (freelancer)
----------------	---

Description	<p>As a member of a team, we develop a platform for manage sensor and actuators in the agriculture field with AWS IoT Core, Lambda, API Gateway, DynamoDB and others. (https://develop.controlplusgrow.com/dashboard)</p> <ul style="list-style-type: none"> ☑ We implemented DynamoDB single table design. ☑ We wrote and manage more than ten AWS Lambda functions. ☑ We comunicated and reach lambda function through API Gateway as well as MQTT protocol with IoT Core and Node-Red. ☑ To deploy lambda functions we used GitLab CICD platform together with AWS CLI. ☑ We Used AWS Cognito to manage users. ☑ We manage lambda exceptions delivering errors from CloudWatch to a Discord channel.
Technology	Python, AWS Lambda, API Gateway, IoT Core, MQTT, DynamoDB, Cognito, CloudWath

Mar 2021 – now	Software Engineer, Python Developer at CHATTIGO
Description	<ul style="list-style-type: none"> ☑ To retrieve, transform and load large amount of data from differents datasources like SQL Server, Apache Druid and MongoDB. ☑ To execute SQL queries to make reports. ☑ Build a reporting component with Flask, implemented with Dependency Injection asyncio, pandas and other tools. ☑ We are beginning to migrate the data stack to Microsoft Azure with Databricks, DataFactory and other Azure tools. Basically building a Lakehouse.
Technology	Python, pandas, matplotlib, numpy, Azure Databricks.

Sept 2020 – Feb 2021	Software Engineer, Remote work at ELROI SUPPLIES
Description	<ul style="list-style-type: none"> ☑ Develop an e-Commerce backend upon Shopify with NodeJS and AWS. ☑ Design and develop a complete serverless architecture with AWS (Lambda, API Gateway, SQS, SNS, Pub/Sub, CloudFront, etc.) ☑ Write Python scripts to deploy and manage AWS Lambda Functions and other resources. ☑ Develop Stripe payment integration. ☑ DevOps and infrastructure manage with Terraform and Python. ☑ Write bash script for CI/CD with GitLab and other minor tasks.
Technology	<p>Javascript, Node</p> <p>AWS (IAM, CloudWatch, Lambda, S3, DynamoDB, SQS, SNS, EC2, Api Gateway)</p> <p>Python, Terraform, AWS SDK for Python and AWS CLI</p>

Jun 2020 - Ago 2020	Software Engineer, Remote work at Gap-Commerce
Description	<ul style="list-style-type: none"> ☐ Backend development of an e-Commerce platform in NodeJS, GraphQL and AWS. ☐ Develop and maintain a serverless backend with Apollo GraphQL Lambda. ☐ Understand and develop a Pub/Sub architecture. ☐ Migrate the NodeJS backend from Javascript to Typescript.
Technology	AWS (Lambda, S3, DynamoDB, SQS, SNS) Javascript, Typescript, NodeJS, Apollo GraphQL
Sept 2019 – May 2020	Instructor Professor, Mathematics Department, UCI
Description	<ul style="list-style-type: none"> ☐ Teach mathematics at university, mainly multivariable calculus, numerical series and differential equations. ☐ Research in artificial intelligence and pattern recognition.
Technology	MatLab, Python
Sept 2014 - Aug 2019	Jr. Software Engineer, Identification and Digital Security Center, UCI
Description	<ul style="list-style-type: none"> ☐ Develop a fingerprint identification framework, a group of biometric algorithms for performance evaluation. ☐ Digital Image Processing (DIP) and Signal Image Processing (SIP) with MatLab, C# and C++. ☐ Develop a web application for the Aeronautic Institute of Cuba to manage identification of aeronautic personnel. Develop, deploy, support and project leader.
Technology	C#, C++, MatLab, PHP, Symfony, HTML, CSS, Javascript, SQL

Education

- ☐ 2009 - 2014, Bachelor in Computer Science, UCI (Universidad de Ciencias Informáticas)

Papers

Projects

Python scripts to generate cicd gitlab pipeline to manage aws lambda functions:

<https://github.com/alayoalex/aws-lambda-gitlab-cicd>

Python script for monitoring AWS Lambda functions and send error messages to a Telegram Channel and getting logs through a Telegram Bot: <https://github.com/alayoalex/aws-lambda-monitoring>

My Data Science and Machine Learning Portfolio:

<https://github.com/alayoalex/data-science-ml-portfolio>

My Undergraduate Thesis Project. An Fingerprint Image Quality Assessment Library in .Net:

<https://github.com/alayoalex/Fingerprint-Image-Quality>

Other Training

- 📖 Course: “Numerical Analysis and Computing with Python” (2020).
- 📖 Course: “Introduction to Artificial Neural Networks” (2020)
- 📖 Course: “Database optimization” (2021)

Languages

- 📖 Languages: Spanish (Native), English (Fluent: Written/ Spoken, B2)