Ainnova

Transforming Diagnostics with a Cost-Effective AWS Migration

About the Customer

In 2019, Ainnova Tech was founded by an experienced international team of specialists dedicated to developing solutions for early detection of diseases using artificial intelligence. Their newest innovation, VisionAi, is a platform to prevent blindness and detect early-onset diabetes.

- Reduced costs and saved time for primary care providers
- Developed a streamlined and cost-efficient process for medical specialists
- Enhanced patient satisfaction and boosted the reputation of medical centers

Executive Summary

Ainnova Tech faced a significant hurdle in its quest to develop AI diagnostic solutions—namely, the prohibitive costs and lengthy time associated with building and deploying machine learning models. Ainnova Tech's AI training method, which involved setting up and maintaining on-premises infrastructure, was expensive, limited scalability, and hindered innovation. Replacing outdated hardware on-site would be a significant expense, and the company realized they needed a more cost-effective and scalable solution to train their models efficiently

The Challenge

As a healthcare start-up, Ainnova Tech needed to be at the cutting edge of diagnostic systems but outdated hardware for AI training modules was costing them time and money

Impact

Ainnova Tech successfully partnered with Nova to overcome these hurdles by migrating to an Amazon Web Services (AWS) cloud-based machine learning platform. Amazon SageMaker is the first fully integrated development environment (IDE) for machine learning (ML). By leveraging the advantages of a fully managed service, every developer and data scientist can build, train, and deploy machine learning models quickly.

The implementation of Amazon SageMaker involved several key steps, including creating stages for each process to help segment errors. This was more efficient and created cost savings by eliminating the customer's need to use the same instance in each stage, and instead use only the computing power that the process required.

The implementation of Amazon SageMaker yielded significant benefits. Notably, the hyperparameter tuning job allows Ainnova Tech to find the best model version by running many training jobs on their dataset using the algorithm they choose and the values for hyperparameters within specific ranges, allowing for better results.

Additionally, Amazon SageMaker Studio is a collaborative space for developers to work together in real time, allowing for better organization and management across the team.

In under one month, Ainnova Tech streamlined its training processes, reduced costs, and improved the overall efficiency of its machine learning development pipeline.

Data Preparation

Nova AI team in Mexico configured and integrated Amazon SageMaker enabling the company to effectively preprocess large volumes of medical data during machine learning.

Model Training

With Amazon SageMaker, Ainnova Tech could efficiently train their AI using distributed computing resources and optimized model performance.

Scalability

Ainnova Tech was able to dynamically adjust computing resources based on their training needs, eliminating the need for expensive onpremise infrastructure.

Cost Optimization

The pay-as-you-go pricing model offered by AWS helped the company minimize costs while maximizing computational efficiency

Amazon SageMaker Features

- Unified End-to-End ML
- Cost Optimization
- Team Collaboration
- Integration with AWS Services
- Monitoring of Models

Timeline

- Migration achieved in less than one month

Impact

Ainnova Tech successfully partnered with Nova to overcome these hurdles by migrating to an Amazon Web Services (AWS) cloud-based machine learning platform. Amazon SageMaker is the first fully integrated development environment (IDE) for machine learning (ML). By leveraging the advantages of a fully managed service, every developer and data scientist can build, train, and deploy machine learning models quickly.

The implementation of Amazon SageMaker involved several key steps, including creating stages for each process to help segment errors. This was more efficient and created cost savings by eliminating the customer's need to use the same instance in each stage, and instead use only the computing power that the process required.

The implementation of Amazon SageMaker yielded significant benefits. Notably, the hyperparameter tuning job allows Ainnova Tech to find the best model version by running many training jobs on their dataset using the algorithm they choose and the values for hyperparameters within specific ranges, allowing for better results.

Additionally, Amazon SageMaker Studio is a collaborative space for developers to work together in real time, allowing for better organization and management across the team.

In under one month, Ainnova Tech streamlined its training processes, reduced costs, and improved the overall efficiency of its machine learning development pipeline.