

Customer's Transformation: Embracing SageMaker for Agricultural Data Science

Executive Summary

NMD upgraded customer's AWS setup with a SageMaker-based platform, tailored for the agriculture sector, emphasizing privacy and security. The project, started on October 1, 2022, streamlined model development for customer's diverse financial modeling teams by introducing uniform workflows and centralized development environments. Despite customization challenges, adherence to established patterns enhanced efficiency. The initiative has enabled the deployment of several models into production, showcasing the effectiveness of a unified approach to data science in agriculture.

Customer Description

A prominent government, agriculture, and financial institution, with multiple offices and over 2000 employees sought to enhance its data management and analysis capabilities.



Description of Service

The client has a mature AWS infrastructure in place for data management. The client also had mature financial modeling teams. However, the teams had different workflows and tools supporting their operations.

NMD assisted in implementing a data science platform focused around Sagemaker to the unique constraints of the industry. Privacy and Security were of paramount importance. Each team was given a domain and access to the services necessary to develop and deploy their models.

NMD worked alongside the client to demonstrate various aspects of the Sagemaker service and how these could be combined into an ML workflow. NMD also helped migrate the service from Studio Classic to the New Studio when the service was updated in November 2023.

NMD still works to support teams by customizing the platform to their needs and offering guidance and direction when making MLOps-type decisions.

Description of Solution

The client required that the data science work take place in an isolated account. Sagemaker was deployed in no-VPC mode for this reason and CodeCommit was chosen as the version control for SageMaker work.

Custom images and custom resources were used to configure and support operations within SageMaker when the lack of internet access required external software packages.

Tailored examples with prescriptive development patterns and practices were provided to assist in onboarding new teams and enforce conventions.

The infrastructure was deployed using AWS CDK.

Description of Outcome

There are currently 5 separate domains supporting as many teams as operating in Sagemaker. Models developed in Sagemaker have made it into production. Teams have a central, common platform on which to develop.

Lessons Learned

Excessive customization within Sagemaker frequently led to complications. The greater the team adhered to established Sagemaker patterns, the more seamlessly operations progressed.

Current Relationship

NMD remains engaged with the client, providing ongoing assistance for this project by supporting Infrastructure as Code (IC) efforts and addressing queries from user teams.