

Hello everyone in this article I will try to explain about AWS SageMaker and AWS SageMaker Canvas. This article will explore briefly overview on these concepts.

What is AWS SageMaker?

AWS SageMaker is a fully managed service designed to help developers and data scientists build, train, and deploy machine learning models quickly and easily.

Here are the Core Components of SageMaker

- SageMaker Studio: Integrated development environment (IDE) for machine learning, enabling users to prepare data, build models, and deploy them all within a single interface.
- SageMaker Notebooks: Fully managed Jupyter notebooks for running ML code. It provides built-in support for AWS services and autoscaling.
- SageMaker Training: Allows training of models using built-in algorithms, custom code, or automated machine learning (AutoML). Training jobs can be distributed across multiple machines to improve speed.
- SageMaker Inference: After training, SageMaker makes it easy to deploy models to an endpoint and scale them automatically based on traffic.
- SageMaker Experiments: Tracks and organizes the different iterations of models for better reproducibility and model comparison.
- SageMaker Data Wrangler: Simplifies data preparation and feature engineering with a visual interface to transform raw data for machine learning.
- SageMaker Debugger: Provides real-time debugging during training, helping detect anomalies like vanishing gradients or overfitting.
- SageMaker Model Monitor: Continuously monitors deployed models for data or model drifts and alerts users when performance drops.
- SageMaker Autopilot: Automates the process of creating machine learning models, offering an easy-to-use interface to generate models without coding.

What are steps to follow to use SageMaker ?

1. Prepare Data: Upload data to S3, clean it using SageMaker Data Wrangler, and select features for training.
 2. Build and Train Models: Use built-in algorithms or bring your own, utilize Jupyter notebooks, and leverage SageMaker Autopilot for AutoML.
 3. Deploy and Monitor: Deploy models to endpoints, use A/B testing for comparison, and monitor model performance over time.
- Here is the example Workflow for SageMaker
- ✓ Data Preparation: Use Data Wrangler to import and transform data.
 - ✓ Model Training: Write custom code in a Jupyter notebook or use built-in algorithms.

- ✓ Model Deployment: Deploy the model to an endpoint using SageMaker Inference.
 - ✓ Monitor: Use Model Monitor to watch for performance drifts.
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What is AWS SageMaker Canvas?

AWS SageMaker Canvas is a no-code machine learning service that enables business analysts and non-technical users to build ML models without needing to write code.

Core Features of SageMaker Canvas

- Point-and-Click Interface: Easy-to-use interface for non-technical users to interact with data and build machine learning models.
- Data Connection: Connects directly to data in AWS, like Amazon S3, Redshift, and local datasets. It can also connect to SaaS applications.
- Automated Model Building: Automatically cleans and preprocesses the data, selects the best algorithms, and generates models without requiring programming.
- Prediction: Provides real-time and batch predictions from models built within the Canvas interface.
- Collaboration with SageMaker Studio: Models built in SageMaker Canvas can be shared with SageMaker Studio for further tuning by data scientists if necessary.
- Use Cases: Commonly used for forecasting, classification, regression tasks, and business decision-making based on data analysis.

- What are steps to follow to use SageMaker Canvas ?

1. Data Import: Upload datasets directly from various AWS data sources or external sources.
2. Prepare Data: Clean and transform data using a visual interface.
3. Build Models: Automatically generate machine learning models with no need for code.
4. Test and Predict: Test models and generate predictions directly within the Canvas interface.
5. Export Models: Export to SageMaker Studio if needed for more advanced tuning or to productionize.

Here is example Workflow for SageMaker Canvas

- ✓ Data Upload: Connect to Amazon S3 or upload local files.
 - ✓ Model Building: Let SageMaker Canvas automatically clean, preprocess, and train the model.
 - ✓ Prediction: Use the model for predictions and export results for analysis.
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