

# Machine Learning with Amazon SageMaker Cookbook



**Machine Learning with Amazon SageMaker Cookbook: 80 proven recipes for data scientists and developers to perform machine learning experiments and deployments** by Joshua Arvin Lat

★★★★☆ 4.8 out of 5

Language : English  
File size : 48992 KB  
Text-to-Speech : Enabled  
Enhanced typesetting : Enabled  
Print length : 762 pages  
Screen Reader : Supported



This cookbook provides a comprehensive overview of Amazon SageMaker, a fully managed platform for building, training, and deploying machine learning models in the cloud. With step-by-step instructions and real-world examples, this guide will help you get started with SageMaker and use its powerful features to develop and deploy ML models for a variety of applications.

## What is Amazon SageMaker?

Amazon SageMaker is a fully managed platform that makes it easy to build, train, and deploy machine learning models in the cloud. SageMaker provides a wide range of tools and services to help you with every step of

the ML lifecycle, from data preparation and feature engineering to model training and deployment.

With SageMaker, you can:

- Build and train ML models using a variety of algorithms and frameworks
- Deploy your models to the cloud or on-premises
- Monitor and manage your models in production
- Access a wide range of pre-built ML components
- Collaborate with other ML practitioners

## Why use Amazon SageMaker?

There are many benefits to using Amazon SageMaker for your ML projects. Some of the key benefits include:

- **Fully managed:** SageMaker is a fully managed platform, which means that you don't have to worry about managing the underlying infrastructure. SageMaker takes care of everything from provisioning and scaling compute resources to monitoring and managing your models.
- **Scalable:** SageMaker is a highly scalable platform that can handle even the most demanding ML workloads. SageMaker can automatically scale up or down your resources based on your needs, so you only pay for what you use.
- **Cost-effective:** SageMaker is a cost-effective solution for building and deploying ML models. SageMaker offers a variety of pricing options to

fit your budget, and you only pay for the resources that you use.

- **Easy to use:** SageMaker is a user-friendly platform that makes it easy to get started with ML. SageMaker provides a variety of tools and resources to help you get started, and you can get started with SageMaker in just a few minutes.

## **Getting started with Amazon SageMaker**

To get started with Amazon SageMaker, you will need to create an AWS account. Once you have an AWS account, you can access the SageMaker console at <https://console.aws.amazon.com/sagemaker>.

Once you are in the SageMaker console, you can create a new notebook instance. A notebook instance is a cloud-based Jupyter notebook that you can use to develop and train your ML models. To create a new notebook instance, click on the "Create notebook instance" button.

In the "Create notebook instance" dialog box, enter a name for your notebook instance and select the instance type that you want to use. The instance type that you select will determine the amount of compute resources that are available to your notebook instance. Once you have selected an instance type, click on the "Create notebook instance" button.

Once your notebook instance has been created, you can start developing and training your ML models. In this cookbook, we will provide step-by-step instructions on how to build and train a variety of ML models using SageMaker.

## **Deploying your ML models**

Once you have trained your ML model, you can deploy it to the cloud or on-premises. To deploy your model to the cloud, you can use the SageMaker deployment service. The deployment service makes it easy to deploy your model to a variety of endpoints, including Amazon EC2 instances, Amazon Elastic Container Service (ECS), and Amazon Elastic Kubernetes Service (EKS).

To deploy your model on-premises, you can use the SageMaker Neo service. The Neo service allows you to package your model as a Docker container and deploy it to any Kubernetes cluster.

## **Monitoring and managing your ML models**

Once you have deployed your ML model, you need to monitor and manage it in production. SageMaker provides a variety of tools and services to help you monitor and manage your models, including:

- **SageMaker Model Monitor:** Model Monitor is a service that helps you monitor the performance of your models in production. Model Monitor can track a variety of metrics, including model accuracy, latency, and throughput.
- **SageMaker Autopilot:** Autopilot is a service that helps you automate the process of building, training, and deploying ML models. Autopilot can automatically select the optimal model architecture and hyperparameters for your dataset, and it can automatically deploy your model to the cloud or on-premises.

Amazon SageMaker is a powerful platform that makes it easy to build, train, and deploy ML models in the cloud. With SageMaker, you can access a wide range of tools and services to help you with every step of the ML

lifecycle. In this cookbook, we have provided a comprehensive overview of Amazon SageMaker, and we have provided step-by-step instructions on how to build, train, and deploy ML models using SageMaker.



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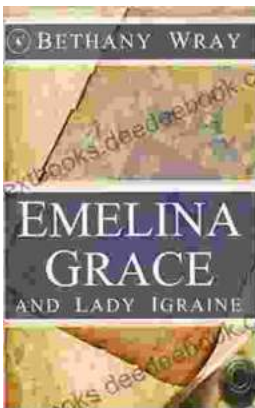
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