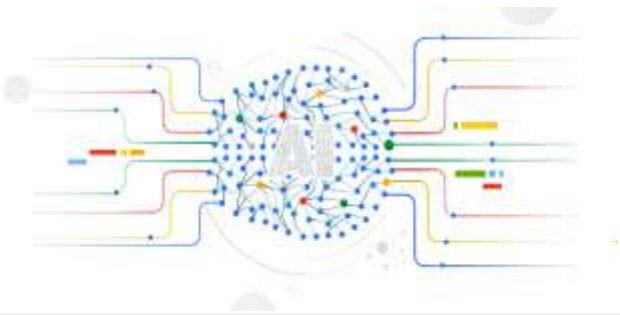


Google Cloud AI

Drashti Patel

WHAT IS GOOGLE CLOUD AI?

Google Cloud AI Machine Learning is a collection of powerful tools and services provided by Google Cloud Platform that enable businesses and developers to create and deploy custom machine learning models.

You may train and deploy models for image recognition, natural language processing, speech recognition, and predictive analytics using these tools and services. Google Cloud AI Machine Learning offers benefits such as improved accuracy and efficiency, cost savings, and the ability to grow quickly.

DATASETS

Tabular Dataset: Credit Card Fraud Detection

The information contains 284,807 credit card transactions, 492 of which are fraudulent. Data comes from Kaggle by European cardholders in September 2013.

Image dataset: Flowers Recognition

There are 4242 flower photographs in the collection from Flickr, Google Images, and Yandex Images, divided into five categories: chamomile, tulip, rose, sunflower, and dandelion. Each class contains approximately 800 photos.

RESEARCH GOALS

1. Learn how to use AutoML tools to train a model on a dataset using Google Cloud AI Platform.
2. Understanding how to test the trained model to guarantee accuracy and effectiveness.
3. Learn how to deploy the Trained model on the Google Cloud AI Platform.
4. Using essential aspects such as accuracy, performance, scalability, and ease of use to assess the success of a project on Google Cloud AI Platform.

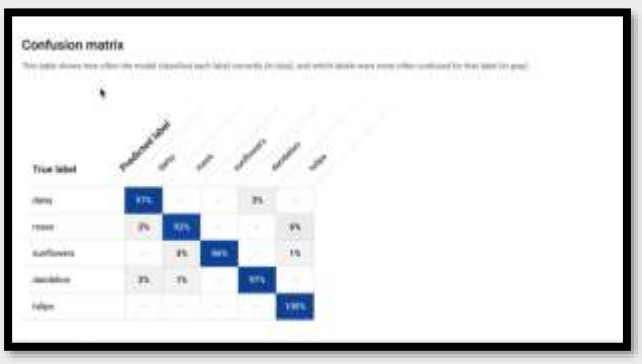
TABULAR DATASET:

METHODOLOGY

1. Create Database
2. Train Model
3. Evaluate Dataset
4. Deploy and Test Model

Overall, AutoML Tables were used to develop a model with 99.9% precision for the credit card fraud detection dataset, with strategies such as oversampling and under sampling utilised to deal with the unbalanced data. The flower recognition dataset used AutoML Vision to detect flowers, with the trained model attaining 96.7% precision and matching accuracy rates of 0.161 and 0.818 for testing photos.

IMAGE DATASET:



References:

1. https://cloudacademy.com/course/introduction-to-google-cloud-machine-learning-engine/introduction-97/
2. Rasul, Kashif. Google Cloud Vertex AI: Getting Started with Google Cloud's AI Platform for Building Scalable Machine Learning Models. Apress, 2020.
3. Y. Chen, X. Zhao, and Y. Zhang, "Multimodal sentiment analysis with consistent sentiment ranking," in Proceedings of the International Conference on Artificial Intelligence and Security (ICAIS), 2020, pp. 609-618.
4. https://www.kaggle.com/datasets/alxmamaev/flowers-recognition
5. https://www.kaggle.com/datasets/mlg-ulb/creditcardfraud

CONCLUSION

In summary, the purpose is to learn about Google Cloud AI Platform, AutoML, and work with various datasets, such as a tabular dataset for credit card fraud detection and an image dataset for flower recognition. Google Cloud AI Platform is a powerful platform for developing and deploying machine learning models, independent of the dataset type. It simplifies and accelerates the process of generating and testing machine learning models with its AutoML tools and pre-built models, and the Vertex AI Dashboard makes it simple to manage and monitor them. Its scalability and ease of use make it a popular choice for enterprises and individuals seeking to quickly and efficiently develop successful machine learning models.