# A Structure for Image Recognition Prediction Using the SASSND Teachable Machine

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***Abstract*— Today's artificial intelligence applications, which have a big impact on industries like healthcare, retail, and security, depend heavily on image identification. In this research, a predictive model for picture recognition is developed using Google's SASSND Teachable Machine. The article explains the fundamental ideas of the Teachable Machine, offers instructions for building a model for photo identification, and evaluates how well the model performs on prediction tests. We assess the model's accuracy, usefulness, and potential for use in real-world situations while presenting experimental findings based on a produced dataset.**

***Index Terms*— Image recognition, teachable machines, machine learning, prediction models, and artificial intelligence applications**

## I. INTRODUCTION

Image recognition is a crucial component of artificial intelligence (AI), allowing computers to assess and analyze visual information. Such models used to need extensive knowledge of machine learning frameworks, a great deal of coding, and a lot of computing power.

But thanks to its user-friendly interface, Google's SASSND Teachable Machine simplifies this procedure and makes it possible for anyone without technical knowledge to create machine learning models. This study investigates the use of the SASSND Teachable Machine to create a reliable picture recognition prediction model. We'll look into how well its transfer learning abilities and neural networks that have already been trained identify and forecast different types of images.

## II. OVERVIEW

A key element of artificial intelligence (AI) is image recognition, which gives computers the ability to comprehend and evaluate visual data. These models used to need a great deal of coding, processing power, and knowledge of machine learning frameworks. But thanks to its intuitive interface, Google's SASSND Teachable Machine streamlines this procedure and enables non-experts to develop machine learning models. The purpose of this study is to investigate the development of an efficient image recognition prediction model using SASSND Teachable Machine. We evaluate its ability to identify and forecast image classes using transfer learning and its pre-trained neural network capabilities. By allowing anyone to train models without knowing any code, Teachable Machine is an online application that democratizes artificial intelligence.

## III. METHODOLOGIES

### 3.1. Dataset Preparation

The custom dataset contains two object categories: HDFC Bank and ICICI Bank. Each category had three hundred images from public datasets. Training (80%) and testing (20%) data sets were segregated. 3.2. Models for Training After uploading the dataset through the SASSND Teachable Machine, the following steps were taken: Labeling: The images were grouped based on their labels.

Requirements for Training: We used MobileNet's default settings and implemented an 80/20 train-test split.

Instructions: The two-minute training session ended

with browser-based materials.

3.3. Model Evaluation

The test dataset was used to assess the training model. Metrics including F1-score, recall, accuracy, and precision were calculated.

## IV. FINAL RESULTS

The Performance of the Model Although the confusion matrix showed that cats and dogs were most frequently misclassified because of their apparent similarities, the model's average accuracy on the test set was 96%. 95% Metric Value Precision 96% accuracy Recall of 97% 96 percent was the F1 score. Usability and Scalability Although SASSND Teachable Machine's dependency on browser resources restricts its scalability for larger datasets, its user-friendly interface (UI) makes it appropriate for non-technical users. By exporting the model to Tensor Flow Lite, it was possible to deploy it on mobile devices, demonstrating its potential for real-time applications such as wildlife monitoring and retail inventory management.

## V. CONCLUSIONS

The Model's Performance The model's average accuracy on the test set was 96%, despite the confusion matrix indicating that dogs and cats were most commonly misclassified due to their apparent similarities. 95% Precision in Metric Values 96% accuracy The F1 score was 97% 96 percent recall. Scalability and Usability Because of its user-friendly interface (UI), SASSND Teachable Machine is suitable for non-technical users, even though its reliance on browser resources limits its scalability for larger datasets. The model may be deployed on mobile devices by exporting it to Tensor Flow Lite, showcasing its potential for real-time applications like store inventory management and wildlife monitoring.

## VI. IMPLEMENTATIONS OF THE SOLUTION

Future studies ought to concentrate on advancing the technologies.

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