AI-Powered Image Classification System

1. Project Overview

This project uses a Convolutional Neural Network (CNN) model to classify images into five categories — Birds, Cats, Dogs, Fruits, and Tiger/Lion. The model was trained using TensorFlow and evaluated on a separate test dataset.

2. Dataset Details

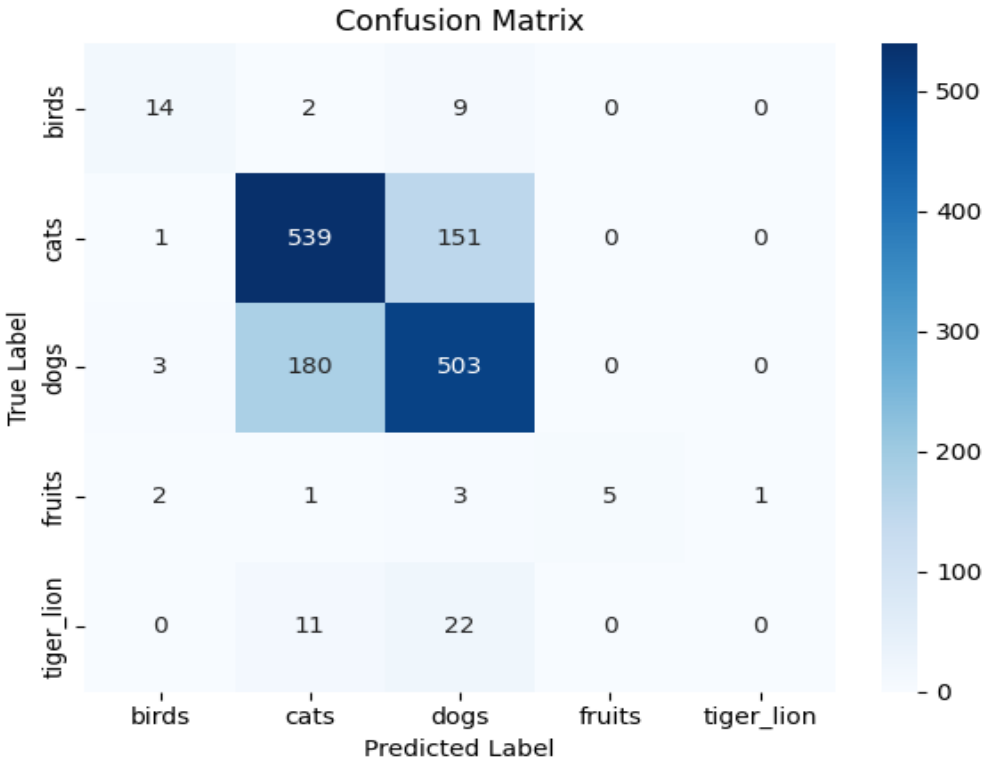
The dataset was divided into three parts: Train, Validation, and Test sets. Each category contains images representing its class. Images were resized and normalized before training.

3. Evaluation Results

Metric	Value
Test Accuracy	73.32%
Test Loss	1.4956
Total Classes	5 (birds, cats, dogs, fruits, tiger_lion)

4. Confusion Matrix

The confusion matrix below shows how well the model distinguished between classes.



5. Conclusion

The trained CNN model achieved a test accuracy of approximately 73%, showing strong performance in classifying cats and dogs, with room for improvement in rare categories such as Tiger/Lion. Future improvements could include more data augmentation and model fine-tuning.