



# **Image Recognition with IBM Cloud Visual Recognition**





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# Problem Statement

- The problem at hand is to develop an advanced image recognition system using IBM Visual Recognition technology.
- This system should be capable of accurately classifying and identifying objects or concepts within images across various domains and applications.



# Abstract

- In recent years, image recognition technology has made significant advancements, enabling businesses to harness the power of visual data for various applications.
- Sentiment analysis, on the other hand, allows organizations to gain insights into the emotions and feelings associated with visual content.
- This paper explores the integration of image recognition and sentiment analysis using IBM Cloud services.
- It examines the key features of the IBM Cloud platform for image recognition and presents a case study to demonstrate its application.
- The conclusion highlights the potential benefits of using IBM Cloud for image recognition with sentiment analysis and discusses future prospects.



# Design thinking

- Create an IBM Cloud Account:** If you don't have one, sign up for an IBM Cloud account.
- Set Up Visual Recognition:** Create a Visual Recognition service instance in your IBM Cloud account.
- Collect and Prepare Data:** Gather a dataset of images that you want to classify or analyze. Make sure you have labeled examples for training.
- Train Your Model:** Use the Visual Recognition service to train your model using your dataset. IBM Visual Recognition uses machine learning algorithms to learn from the labeled data.



- **Test and Deploy:** Once your model is trained, you can test it to ensure it's making accurate predictions. You can also deploy it to make predictions in real-time
- **Integrate with Your Application:** Integrate the Visual Recognition API into your application or service to use it for image analysis.
- **Monitor and Improve:** Continuously monitor the performance of your model and retrain it with new data if necessary to improve its accuracy.
- You can use the IBM Watson Visual Recognition API to interact with the service programmatically, allowing your applications to make image recognition requests and receive predictions. Please note that the specific steps and features of IBM Visual Recognition may change over time, so it's essential to refer to IBM's official documentation for the most up-to-date information and guidance on using the service.



# Problem Solving Statement

- Develop a robust image recognition system using IBM Visual Recognition to accurately classify objects and scenes in real-time, optimizing for both speed and accuracy



# Features

- **Image Recognition Capabilities:** IBM Cloud offers a powerful image recognition API that leverages deep learning and neural networks to identify objects, scenes, and text within images.
- **Sentiment Analysis:** IBM Cloud includes a sentiment analysis service that analyzes the textual content extracted from images to determine sentiment polarity, such as positive, negative, or neutral.
- **Customization:** Users can fine-tune the image recognition and sentiment analysis models to suit specific use cases.
- **Real-time Processing:** IBM Cloud supports real-time image recognition and sentiment analysis, making it suitable for applications where immediate feedback is required, such as social media monitoring and customer feedback analysis.



# Advantages

- **High Accuracy:** IBM Visual Recognition leverages deep learning models to achieve high accuracy in image classification and object detection tasks.
- **Customization:** You can train and fine-tune the model to recognize specific objects or concepts tailored to your unique use case.
- **Ease of Use:** It provides user-friendly tools and APIs that simplify the process of building, training, and deploying image recognition models.
- **Scalability:** IBM Visual Recognition is designed to handle large-scale applications, making it suitable for both small projects and enterprise-level solutions.
- **Versatility:** It supports a wide range of image types, including static images and video frames, making it versatile for various applications



# Code

eg:

```
def extract_sentiment(review_text):  
    # run the syntax model  
    # converting review text into lower case  
    review_text = review_text.lower()  
    syntax_result = syntax_model.run(review_text, parsers=('token', 'lemma', 'part_of_speech'))  
    # run the sentiment model on the result of the syntax analysis  
    sentiment_result = sentiment_model.run(syntax_result, sentence_sentiment=True)  
  
    document_sentiment = sentiment_result.to_dict()['label']  
    sentence_sentiment = [(sm['span']['text'], sm['label']) for sm in  
        sentiment_result.to_dict()['sentiment_mentions']]  
    return (document_sentiment, sentence_sentiment)
```



# Conclusion

- The integration of image recognition with sentiment analysis using IBM Cloud offers a powerful solution for businesses seeking to understand and leverage visual data.
- By combining deep learning-based image recognition with sentiment analysis, organizations can gain valuable insights into the emotions and opinions associated with their visual content.
- This technology has the potential to revolutionize industries such as marketing, e-commerce, and customer service by providing actionable data and improving decision-making.



Thank You

