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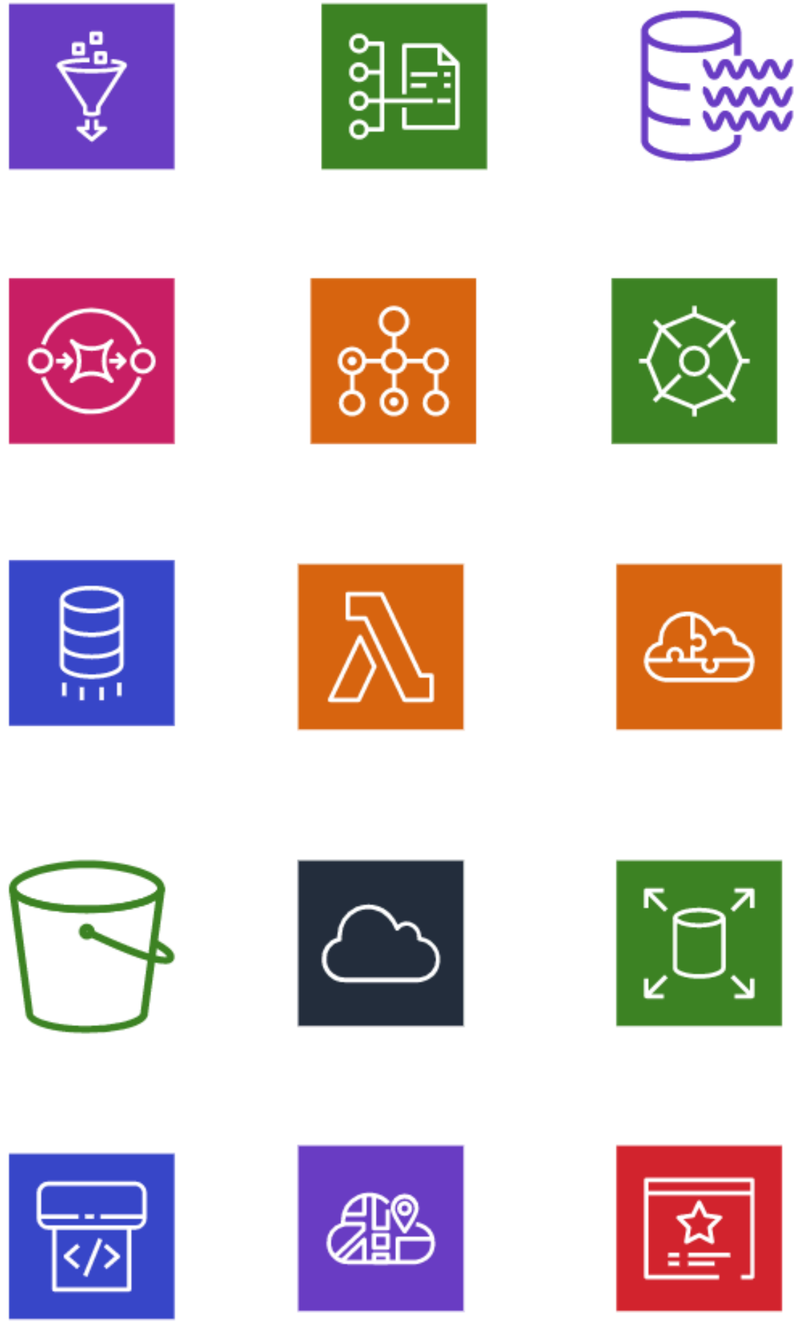
AWS Based Sentiment Analysis Project

Content



SENTIMENT ANALYSIS

TEAM MEMBERS

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DEPI Project 2024

Introduction

In today's digital age, social media platforms generate massive amounts of unstructured data that offer valuable insights. This project leverages machine learning to classify tweets in real time as either "happy" or "sad," using AWS SageMaker. Analyzing social sentiment, it can help businesses, researchers, and organizations understand public opinion, monitor brand reputation, and make data-driven decisions..

SENTIMENT ANALYSIS

USED AWS SERVICES

Sentiment Analysis

AWS SAGEMAKER

PROJECT SEQUENCE

AWS SAGEMAKER IMPLEMENTATION

1. Set up SageMaker for model training, tuning, and deployment.

2. Facilitated seamless storage of data and model artifacts in S3.

3. Configured the real-time SageMaker endpoint for predictions

AWS SERVICES

LOCALLY TRAINED

PERFORMANCE MONITORING AND SCALABILITY

1. Monitored model performance using AWS CloudWatch.

2. Optimized endpoint scalability for handling high prediction loads.

3. Implemented alerts for detecting issues in real-time prediction.

PROBLEM-SOLVING AND FINAL ANALYSIS

1. Resolved challenges related to model deployment and integration

2. Analyzed model performance through metrics like accuracy and confusion matrix.

3. Delivered the final performance report with detailed analysis.

Sentiment Analysis

BACKEND DEVOLPMENT

Sentiment Analysis

BACKEND INTEGRATION AND API DEVELOPMENT

1. Role: Backend Developer and AWS Integration Specialist

2. Integrated SageMaker endpoint with external applications using APIs.

3. Ensured efficient data handling and communication with the model.

REAL-TIME DATA PROCESSING

1. Set up mechanisms to trigger sentiment analysis for new tweets.

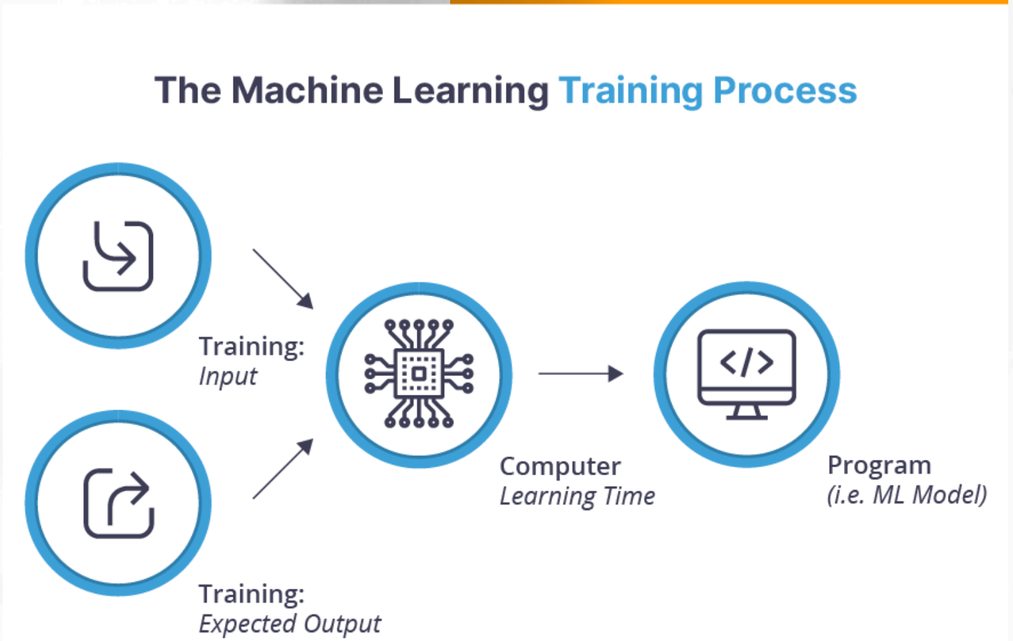
2. Implemented error handling and data validation processes

3. Assisted in debugging and optimizing backend operations.

Sentiment Analysis

MODEL TRAINING &

PERFORMANCE EVALUATION



MODEL TRAINING

1. **Fine-tuned BlazingText model's hyperparameters (learning rate, batch size).**

2. **SageMaker**

   Utilized SageMaker's built-in tuning functionality whcih Aimed for optimal accuracy while minimizing training loss.

3. **Ran multiple training jobs to test different configurations.**

EVALUATION AND MODEL HEALTH MONITORING

1. Set up CloudWatch alerts for real-time model health tracking

2. Reviewed results to ensure consistent prediction quality.

3. Provided recommendations for model improvements

DEPLOYMENT AND TESTING EXPERTISE

DEPLOYMENT AND TESTING OF MODEL

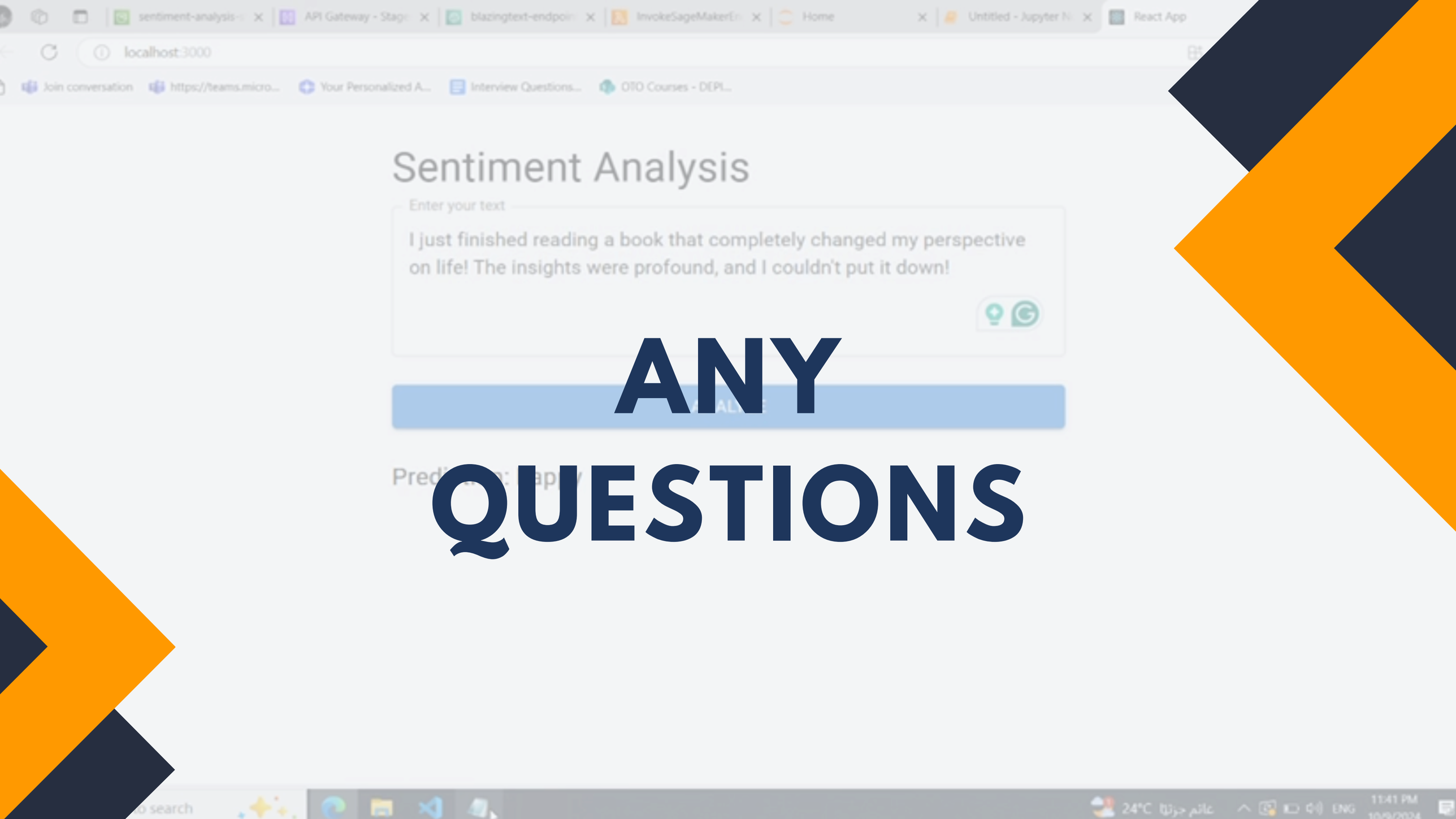
1. Led deployment of the sentiment analysis model on SageMaker.

2. Ensured Endpoint security with IAM roles and API Gateway.

3. Conducted tests to ensure real-time performance of the model.

SYSTEM INTEGRATION AND DOCUMENTATION

1. Worked on troubleshooting deployment issues.
2. Supported the team in optimizing testing procedures.
3. Conducted tests to ensure real-time performance of the model.


Sentiment Analysis
Enter your text
I just finished reading a book that completely changed my perspective on life! The insights were profound, and I couldn't put it down!
ANY
QUESTIONS