

Deploying ML models in Cloud

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Overview

Our goal was to learn more about deploying machine learning models from development to production environments.

We worked to deploy 3 models:

Student exam performance indicator.

This ml model calculates a students expected exam grade using a variety of demographic inputs.

DL model will be NBAi-

A deep learning model designed to bring AI-backed insights into the outcomes of NBA sporting events.

ML model will be NutriScanAI-

an AI-Powered Calorie Tracking application and Virtual Dietary Assistant.

Implementation details

AWS Services Utilized:

AWS IAM to implement identity and access controls

AWS Elastic Beanstalk to deploy and scale the Application.

AWS Cloudwatch to monitor the health of resources

AWS S3 to host resources for the deep learning model

AWS Elastic Container Registry to host the Deep learning Model Environment

AWS Lambda and API Gateway to provision the model and limit uptime

ML Model Student Exam Performance Indicator

  

 Not Secure — flask-env.eba-yahbfibr.us-east-2.elasticbeanstalk.com 

   

Student Exam Performance Indicator

Student Exam Performance Prediction

Gender

Race or Ethnicity

Parental Level of Education

Lunch Type

Test preparation Course

Writing Score out of 100

Reading Score out of 100

THE prediction is 94.5

DL Model NBA-I

FastAPI - Swagger UI

127.0.0.1:8000/docs#/default/my_function__get

Finish update

Curl

```
curl -X 'GET' \
  'http://127.0.0.1:8000/?text=predict' \
  -H 'accept: application/json'
```

Request URL

```
http://127.0.0.1:8000/?text=predict
```

Server response

Code

Details

200

Response body

```
{
  "spread": [
    -5.082385540008545,
    2.230335235595703,
    -4.981662273406982,
    1.4634356498718262,
    10.9884462395656738,
    -1.3941761255264282,
    -1.504422903060913,
    1.316511392993838,
    -5.274886608123779,
    -2.0958783626556396,
    -8.41075325012207,
    -0.6818966865539551,
    5.092355251312256,
    10.526646614074707,
    -2.5561084747314453,
    -1.8155325651168823,
    7.386997222900391,
    0.24228104948997498,
    2.398059844970703,
    10.416826248168945,
    -3.7092700004577637,
    -6.772974449119385,
    2.3207359311064844
  ]
}
```

Download

Response headers

```
content-length: 24633
content-type: application/json
date: Wed, 17 Apr 2024 14:31:12 GMT
server: uvicorn
```

Responses

Code	Description	Link
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Nutriscan AI

NutriScan AI

Input Prompt:

Also tell me with what type of combinations this food taste better and also have high in protein

Choose an image...



Drag and drop file here

Limit 200MB per file • JPG, JPEG, PNG

Browse files



High-Calorie-Foods-For-Weight-Gain.jpg 461.3KB



Uploaded Image.

Tell me the total calories

The Response is

1. Salmon (100g) - 208 calories
2. Avocado (100g) - 160 calories
3. Olive oil (1 tbsp) - 119 calories
4. Almonds (28g) - 164 calories
5. Walnuts (28g) - 185 calories
6. Fish oil (1 capsule) - 10 calories

Total calories: 846 calories

Salmon and avocado are a great source of protein and healthy fats. They can be combined with olive oil, almonds, and walnuts to create a delicious and nutritious meal.

A large red square with a white border, centered on a white background. The text "Thank you" is written in white inside the square.

Thank you