Alpha Presentation
Amazon Review Confidence Tool

The Capstone Experience

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Project Overview

• Review Authenticity Tool
  ▪ Predict if an Amazon product review is genuine for sellers & customers alike
  ▪ Visualize confidence score with easy to understand graphics

• Easily Accessible Data
  ▪ Browser extension to display data on-site on Amazon products
  ▪ Web page to provide further information and additional features
System Architecture

The Capstone Experience

Team Amazon Alpha Presentation
Home Page

*** Got our Product Review browser extension? Install it HERE ***

Saved Items

- PlayStation 5 Console: $499.99
- Nintendo Switch with Neon Blue and Neon Red Joy-Con: $299.99
- Xbox Series X: $499.99

Featured Items

- Apple AirPods Pro (2nd Generation) Wireless Earbuds with MagSafe Charging Case: $239.99
- (Pack of 2) Replaced Remote Control for Roku TV, Compatible for TCL, Roku/Hisense Roku/Onn, Roku/Sharp Roku/Element Roku/Westinghouse: $11.57
- 10Ft Long Surge Protector Power Strip, Extension Cord with 8 AC Outlets and 4 USB Ports(1 USB C), 3-Side Outlet Extender Strip, Flat Plug, Wall Mount, Dorm Home: $19.86
Product Page

Under Armour Men's Charged Assert 9 Running Shoe

Adjusted Review Data 26,124 Ratings Considered
4.4 out of 5 407 Removed

For more information about our calculations, click here.

Original Data 4.6 out of 5 26,124 global ratings
5 Star 77% 4 Star 14%
3 Star 4% 2 Star 2%
1 Star 3%

Trust Customer Reviews

Confidence Score: 85% trusted

Reviewed in the United States on September 9, 2022
Size: 11 X-Wide | Color: Black/White | Verified Purchase

I bought a pair before I took a trip to Seattle as my previous shoes were worn out, being so close to the trip I took a chance. I went with the wife simply because of the shape of my feet, narrow/normal shoes just don't cut it anymore. Read more...

Confidence Score: 85% trusted
Browser Extension (On Amazon)

The image shows a browser extension for Amazon that adjusts customer reviews. The extension highlights the percentage of 5-star reviews and provides an adjusted rating of 4.5 out of 5. For more information and metrics, visit their web application here.
Fake Review Generation

```python
response = client.invoke_endpoint(EndpointName="ElectronicsGenModel",
                               ContentType='application/json',
                               Body=data_bytes)

# load the response into clean variable
result = json.loads(response['Body'].read().decode())

# clear our the newline chars from output
generated_reviews = result[0]['generated_text'].split("\n")

for review in generated_reviews:
    print(review)

Great camera quality! I found it quite nice and accurate. If the other review had been the same then I could probably have said to myself: there is not a better camera in this price range.

Rated 5 out of 5 by daniel k from Very simple and fast Very simple and fast

Rated 5 out of 5 by DZB from Great price For what it is I bought this camera to look at some vintage film. It has a great quality and the sound is clear in quality. I want to give it a shot and to say thank you all... for this camera it was a great deal. It was very good price.

Rated 5 out of 5 by JayC from Great deal I am very impressed with the quality and quality of the Canon EOS 35mm f/1.2 E DSLR. You can also use it for the Sony STIF. I have a 35mm f/1.2 from the Sony STIF but no 50mm f/1.1 E lens. This camera is also better than other high end lenses which I own. I would buy again for that to work and use for other things or have it back.
```
What's Left: Current Status
What’s Left: Beta
What’s Left: Deliverable

Amazon DynamoDB → Amazon EventBridge → Amazon S3 → Amazon SageMaker
- Train
- Authenticity Model
- Fake Review Generation Model

AWS CloudFormation

Amazon DynamoDB
- New Review Training Data Table
- Review Score Table
- Product Table
- Seller Table

AWS Lambda
- Review Rating Function
- Product Rating Function
- Seller Rating Function

Amazon API Gateway
- Endpoint
- AWS Amplify Web App
- Amazon Cognito

Chrome Browser Extension
Amazon Store Customers
Amazon Store Sellers
Questions?
ML Preprocessing Explained

- SkLearn.CountVectorizer(analyzer)
  - Tokenize text features
  - Analyzer picks out stopwords, punctuation, etc

- Term Frequency – Inverse Document Frequency
  - Word “Originality”
  - Tf: times word t appears in doc d
  - Idf: # of docs word appears in

In implementation, must account for divide-by-zero errors