MICHIGAN STATE UNIVERSITY

Beta Presentation

Amazon Review Confidence Tool

The Capstone Experience

Team Amazon

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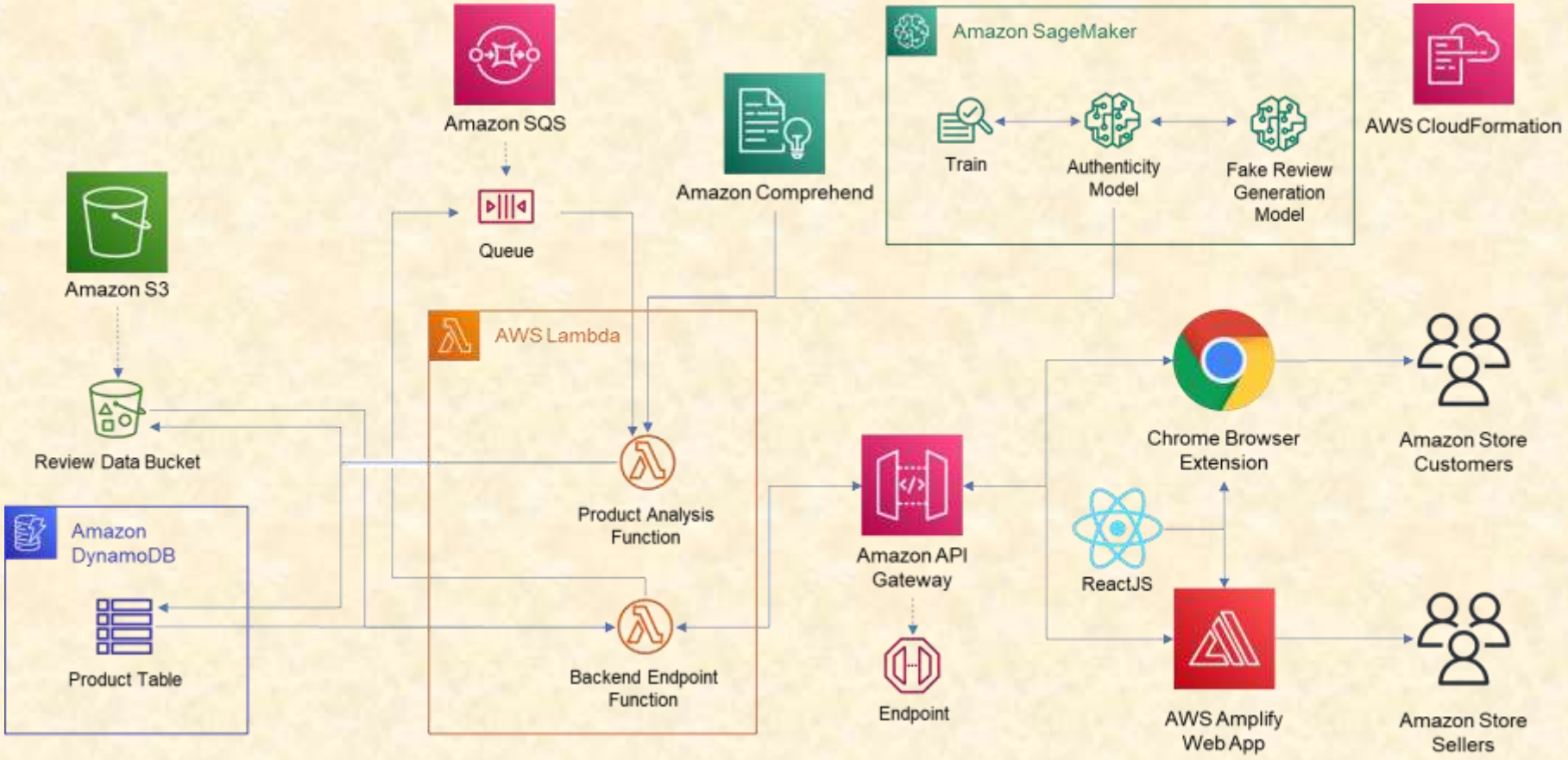
From Students…
…to Professionals

Project Overview

- Review Authenticity Tool
  - Analyze Amazon product reviews for authenticity to provide additional trust to the user experience
- Easily Accessible Data
  - Browser extension to quickly display a summary of adjusted review data
  - Web app to provide additional insights

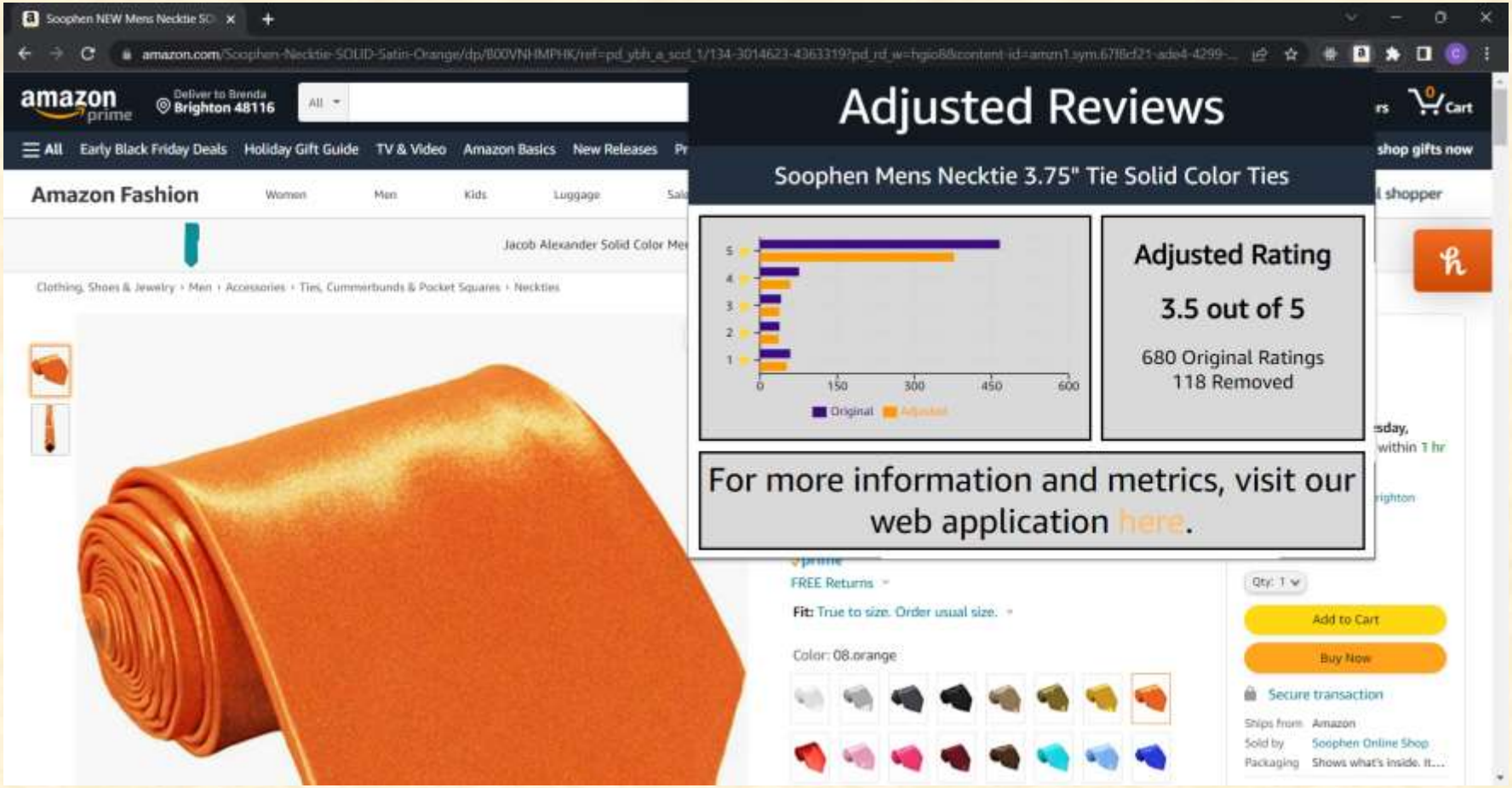
System Architecture



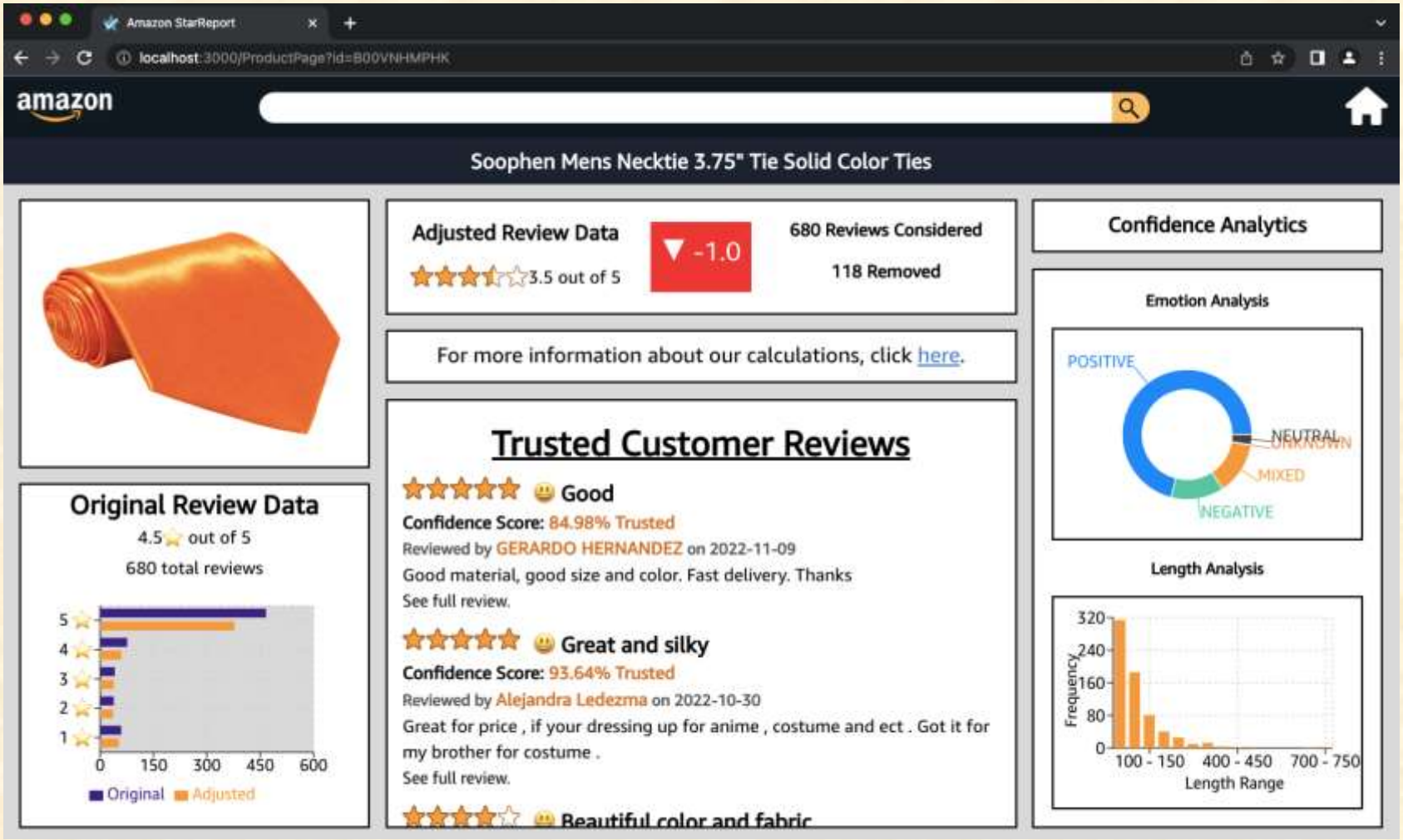
Home Page


Amazon StarReport
localhost:3000
amazon StarReport
Paste an Amazon product URL to get started!
This tool provides the user insight into the product with the goal of improving customer service and product quality. This tool will display a confidence score for each product review that predicts if a review is genuine or not and will display an adjusted total average rating after filtering reviews with low confidence scores.
Searched Items

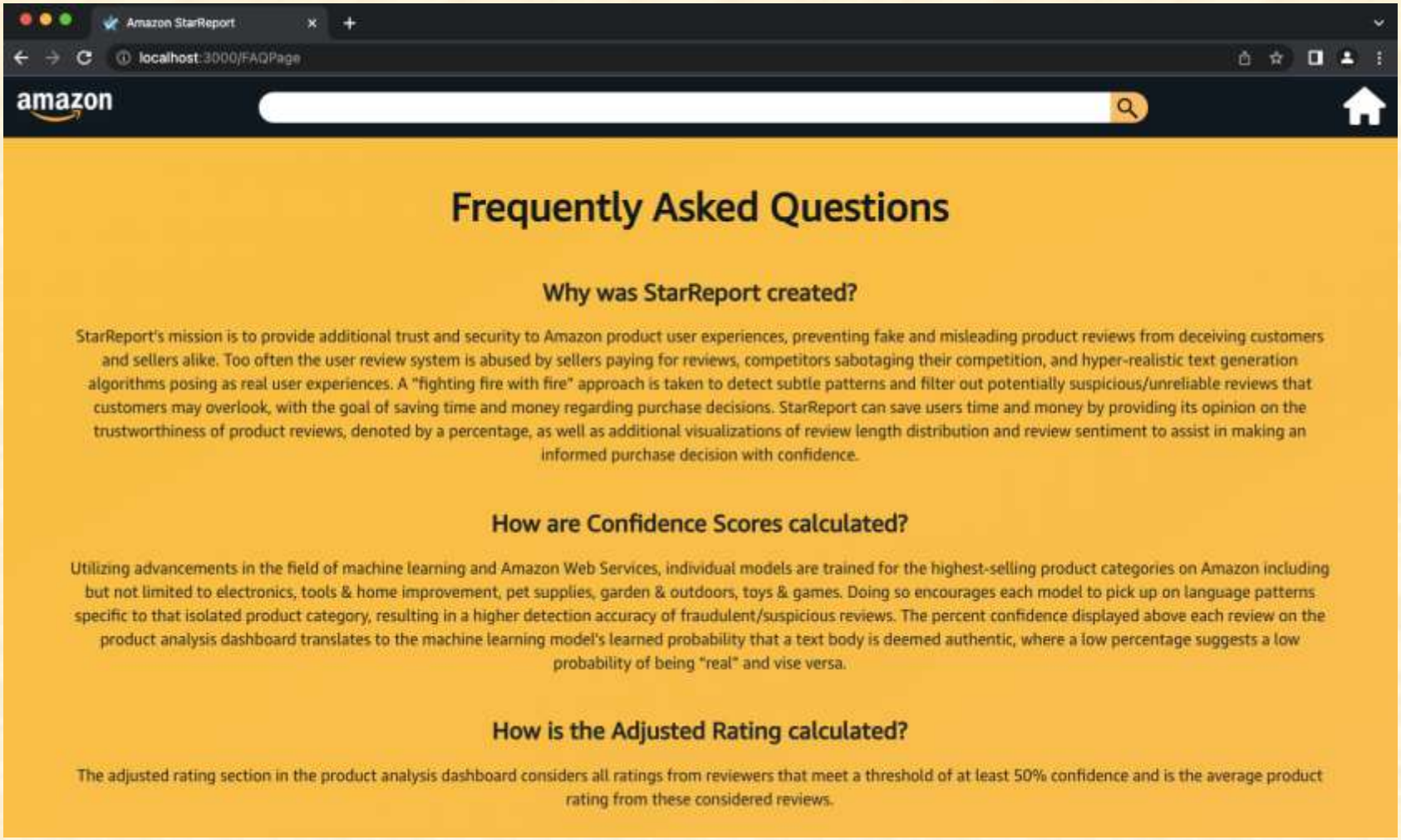
Browser Extension



Product Page



FAQ Page


Amazon StarReport
localhost:3000/FAQPage
amazon
Frequently Asked Questions
Why was StarReport created?
StarReport's mission is to provide additional trust and security to Amazon product user experiences, preventing fake and misleading product reviews from deceiving customers and sellers alike. Too often the user review system is abused by sellers paying for reviews, competitors sabotaging their competition, and hyper-realistic text generation algorithms posing as real user experiences. A "fighting fire with fire" approach is taken to detect subtle patterns and filter out potentially suspicious/unreliable reviews that customers may overlook, with the goal of saving time and money regarding purchase decisions. StarReport can save users time and money by providing its opinion on the trustworthiness of product reviews, denoted by a percentage, as well as additional visualizations of review length distribution and review sentiment to assist in making an informed purchase decision with confidence.
How are Confidence Scores calculated?
Utilizing advancements in the field of machine learning and Amazon Web Services, individual models are trained for the highest-selling product categories on Amazon including but not limited to electronics, tools & home improvement, pet supplies, garden & outdoors, toys & games. Doing so encourages each model to pick up on language patterns specific to that isolated product category, resulting in a higher detection accuracy of fraudulent/suspicious reviews. The percent confidence displayed above each review on the product analysis dashboard translates to the machine learning model's learned probability that a text body is deemed authentic, where a low percentage suggests a low probability of being "real" and vise versa.
How is the Adjusted Rating calculated?
The adjusted rating section in the product analysis dashboard considers all ratings from reviewers that meet a threshold of at least 50% confidence and is the average product rating from these considered reviews.

What's left to do?

- Feature Complete
- Stretch Goals
  - Optimizing Product Category Models Accuracy
    - Larger Training Datasets (>40,000)
    - Hyperparameters
  - Sorting Filtered Reviews (least/most confident)
  - Insights into ML Confidence
- Other Tasks
  - Front-End Formatting
  - Expanding FAQ Page

Questions?