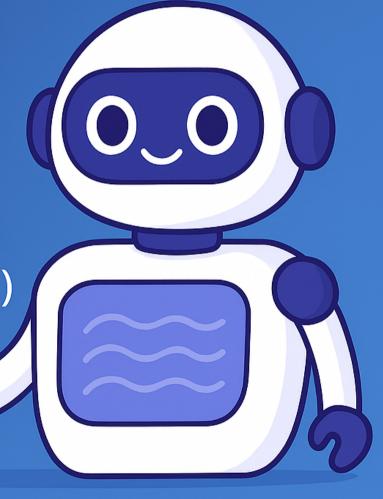
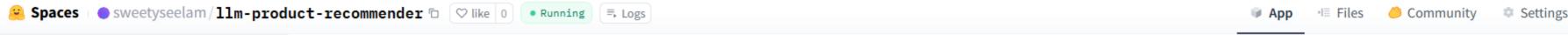
# LLM Product Recommender:

How Al-Powered Semantic Recommendations Are Transforming Product Search & Trust on Amazon (and Beyond)









#### Go to:

- Overview
- Test or Upload Data
- Explain Model (SHAP)
- LLM Recommendation

# Project Overview

This professional-grade app helps users find the **best product** based on their query, using a powerful pipeline:

- Retrieve similar product reviews using sentence embeddings
- Rank them using a trained XGBoost regression model
- Explain predictions using SHAP and generate an LLM-based natural recommendation using Phi-2

#### Use Cases:

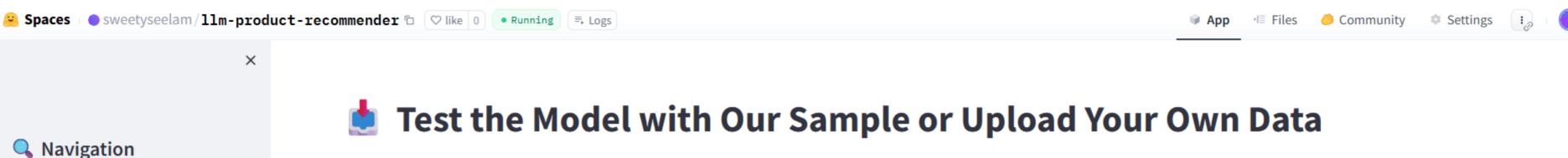
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- Boosting product search experiences
- · Personalized shopping assistants
- · Enhancing review analytics for businesses

Built With: XGBoost • SHAP • Hugging Face Phi-2 • SentenceTransformers • Streamlit

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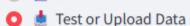


Browse files

# Navigation

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Overview



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# You can either:

- Use our sample Amazon review dataset, or
- Upload your own CSV with these required columns:
  - o reviewText (text), verified\_purchase (0 or 1), helpful\_vote (int), asin (text)

Upload your CSV file here



Drag and drop file here

Limit 200MB per file • CSV

Use Sample Dataset

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Metric	Result (App)	Business Target
MAE (Mean Abs. Error)	0.72 stars	≤ 1.0 star
RMSE	0.99 stars	≤ 1.2 stars
R <sup>2</sup> Score	0.44	≥ 0.40
Pseudo-Classification Acc.	48.4%	≥ 40%
Inference Time	<2 seconds	Real-time, scalable





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# **Model Explainability with SHAP**

This view explains why the model predicts certain ratings. The SHAP summary plot shows which features most influence predictions.

Generate SHAP Summary Plot

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