trustorch.ext

DARK PATTERNS

A PROJECT BY :

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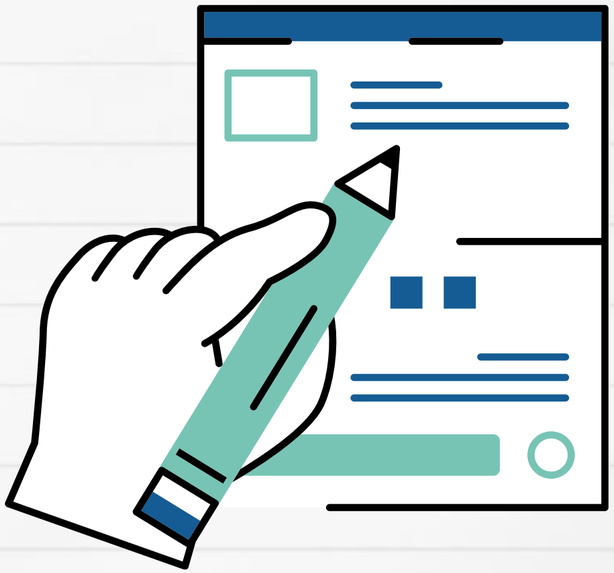
OUR PROBLEM STATEMENT



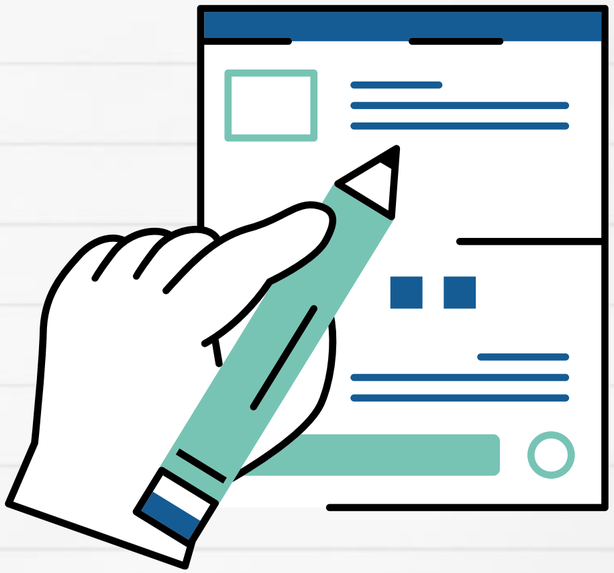
E-commerce thrives on trust and transparency. Unfortunately, both are often undermined by insidious practices like dark patterns: manipulative design elements that steer users towards unintended actions. Recognizing this growing concern, we propose a two-pronged solution to safeguard online shoppers:

Authenticating User Reviews:
Utilize advanced NLP and machine learning to identify suspicious language patterns in reviews.
Analyze reviewer behavior for inconsistencies and connections to known review farms.
Employ sentiment analysis to reveal emotional tones, ensuring genuine customer experiences are reflected.

Exposing False Urgency and Scarcity Tactics:
Implement algorithms to detect artificial countdown timers not linked to actual inventory changes.
Monitor historical stock fluctuations for signs of artificial manipulation.

Our mission is to foster a transparent online marketplace by equipping businesses and consumers with tools to combat dark patterns, ultimately creating an environment built on trust and ethical practices.

OUR SOLUTION

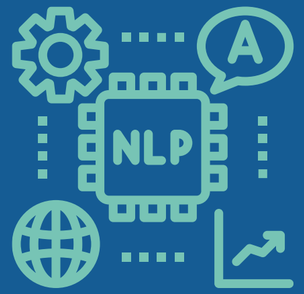


To achieve our ultimate solution to the problem statements we bring to you our browser extension “EcommEvadders”

- **Fake Reviews Alert:**
  - **Real-time detection of fake reviews.**
  - **Empowers informed decisions.**
- **Urgency and Scarcity Warning:**
  - **Detects fake timers and stock indicators.**
  - **Timely warnings prevent impulsive buying.**
- **Sponsored Product Highlighting:**
  - **Identifies and emphasizes sponsored products.**
  - **Enhances transparency.**
- **Price Correction:**
  - **Rounds off prices for clarity.**
  - **Prevents misleading tactics.**
- **Sorting Features:**
  - **Sorts by delivery date and reviews ratio.**

METHODOLOGY – NLP AND ALGORITHM

Dark Buster uses advanced technology for real-time detection of fake reviews, ensuring a trustworthy e-commerce experience.



NLP for Sentiment Analysis:
Analyze review sentiments for authenticity.
Implementation:
NLP interprets emotional tone and identifies manipulation patterns.

Algorithmic Analysis for Urgency and Scarcity Detection:
Detect fake timers and stock indicators.
Implementation:
Advanced algorithms analyze timer behavior and stock indicators.
Real-time processing ensures instant identification.

Visual Elements:
Simplified flowcharts illustrate NLP and algorithms.
Accuracy and Reliability:
Ongoing algorithm refinement.
Regular updates based on evolving patterns and user feedback.

Call to Action:
Emphasize Dark Buster's robust technology, adaptable to changing e-commerce practices.
Highlight real-time processing importance for immediate and accurate insights.

FAKE REVIEWS DETECTION

Dark Buster uses advanced technology for real-time detection of fake reviews, ensuring a trustworthy e-commerce experience.
This is achieved by using ethical means of scrapping data from ecom sites
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Using NLP for sentiment analysis, we analyze linguistic patterns and detect deceptive sentiments to identify to detect fake or manipulated reviews

OBJECTIVES

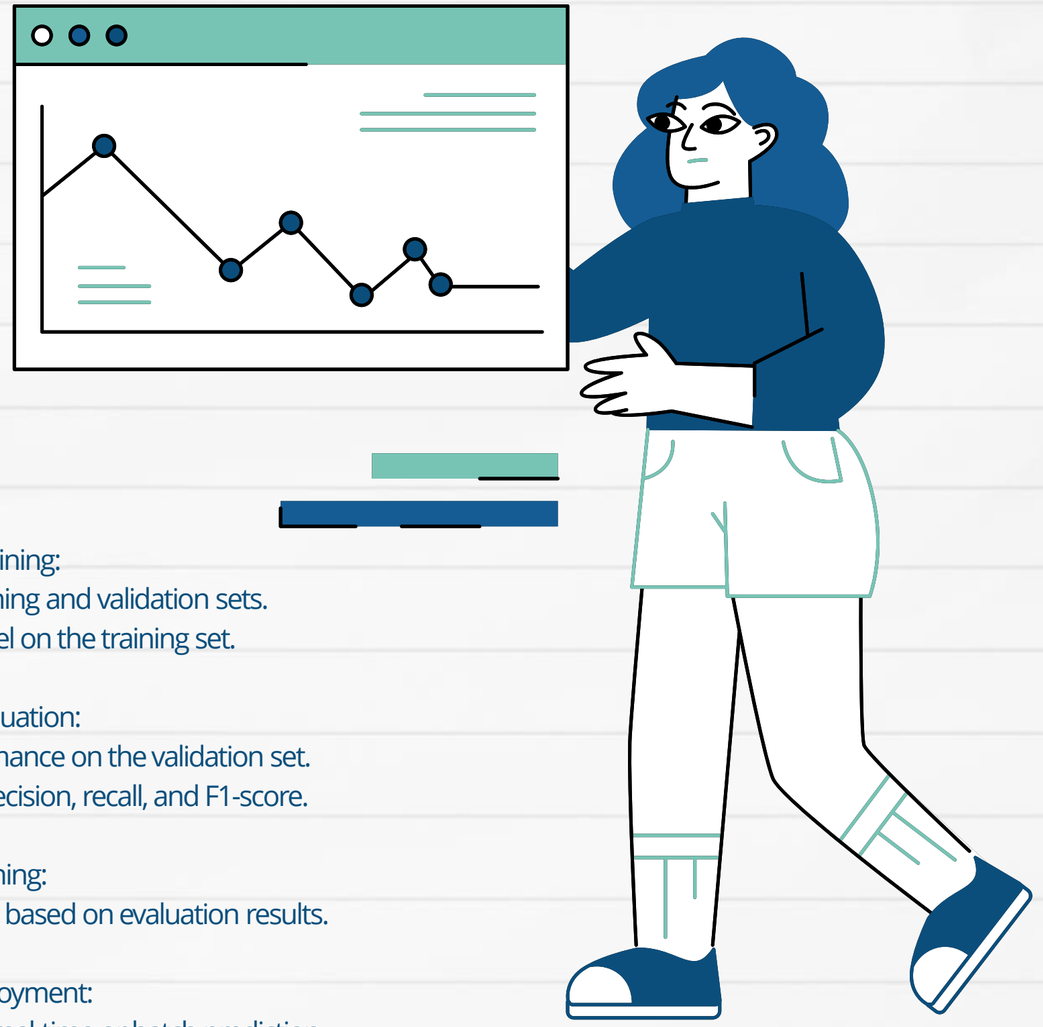
MAIN OBJECTIVE

Keep users safe from dark patterns used by various ecomm sites including fake reviews, fake deceptive patterns.

SECONDARY OBJECTIVES

Help users have a smooth unbiased experience while browsing through shopping sites.

METHODOLOGY: PROCEDURES AND TOOLS



Problem Definition:
Clearly define the problem: Detecting fake reviews on e-commerce platforms.
Specify the types of fake reviews you want to detect (e.g., spam, biased, paid, etc.).

Data Collection:
Gather a diverse dataset of reviews from the target e-commerce platform.
Ensure the dataset includes labeled examples of genuine and fake reviews.

Data Preprocessing:
Clean and preprocess the text data. This may include:
Removing HTML tags, special characters, and irrelevant symbols.
Lowercasing text for uniformity.
Tokenization and stemming.

Exploratory Data Analysis (EDA):
Understand the distribution of genuine and fake reviews.
Explore relevant statistics and visualizations.

Feature Engineering:
Extract meaningful features from the text data.
Consider sentiment analysis, word embeddings, or other NLP techniques.

Model Selection:
Choose a suitable model architecture for text classification.
Consider using pre-trained models for transfer learning.

Model Training:
Split the dataset into training and validation sets.
Train the chosen model on the training set.

Model Evaluation:
Evaluate the model's performance on the validation set.
Use metrics like accuracy, precision, recall, and F1-score.

Fine-Tuning:
If needed, fine-tune the model based on evaluation results.

Model Deployment:
Deploy the trained model for real-time or batch prediction.

Monitoring and Maintenance:
Implement monitoring for model performance in a production environment.
Regularly update the model as new data becomes available.

TIMELINE: PHASES

01

- Define Project
- Clearly outline project objectives and scope.

02

Data Collection
- Gather diverse review dataset from the target platform.

03

- Setup Environment
- Choose programming language and set up development environment.

04

- Data Preprocessing
- Clean and preprocess text data, handle missing values.

05

- Model Development
- Choose model architecture, train, and fine-tune the model.

06

Deployment and Documentation
- Deploy the model and document methodologies, findings, and user manuals.

TECH STACK

Our project have used advance machine learning libraries like NLTK, SVM, Scikit learn etc. We have made a etension that pops up on ecomm sittes with possibility of fake reviews. It is built on JS and HTML. we have used HTML, CSS and JS for our frotnend of our website, which is powered by flask on the backend. We have used hosting service azure to host our model. Also services like Github and Git has played an important role.

FUTURE SCOPE

The future scope of this project is to extend beyond fake review detection and encompass the capability to flag potentially fraudulent e-commerce sites. By leveraging advanced natural language processing and machine learning techniques, the system aims to analyze user-generated content comprehensively. This expansion represents a holistic approach to combating deceptive practices in the digital marketplace, fostering a safer and more trustworthy online environment for consumers. Implementing mechanisms to identify and address deceptive websites enhances the overall integrity of the e-commerce ecosystem, promoting transparency and reliability. The project's vision is to contribute significantly to the broader goal of establishing ethical and secure digital commerce practices

THANK YOU VERY MUCH!