

Market Demand Analysis Using NLP in Urdu Languages.

Group Number: 01

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Abstract:

- The importance of Urdu sentiment analysis
- Applications of NLP in Urdu language
- Data preprocessed for cleaning, normalization, and transformation.
- Challenges arise due to the scarcity of NLP solutions tailored for Urdu language.
- Evaluation of approach's effectiveness using various algorithms
 - SVM, multinomial logistic regression, random forest: 93% accuracy.
 - RNN excels among deep learning models: 94% accuracy.

Introduction & Related Work:

- Investigated NLP methods for Urdu market demand analysis.
- Introduced predictive model using social media data and NLP algorithms.
- Importance of studying consumer dynamics in the Urdu-speaking market.
- Offers insights for improving offerings to meet customer needs.
- Social media sentiment's impact on stock
- Machine learning's potential to enhance online shopping experiences
- Opportunities for gaining competitive advantage in untapped markets.

Methodology:

- Named Entity Recognition
 - Finding the brand of laptops among the comments
- Gender predication:
 - Python gender guesser package
 - Crucial due to it's vary of preferences on different gender
 - Understanding the preferences based on gender

SENTIMENT ANALYSIS

Table I
MODEL PERFORMANCE

Models	Precision	Recall	F1-Score	Accuracy
Logistic Regression	93	94	93	93
SVM	93	93	93	93
Multinomial NB	91	90	90	90
Random Forest Classifier	93	93	93	93
Gradient Boosting Classifier	89	89	89	89
RNN	94	94	94	94
CNN	92	92	92	92
LSTM	93	93	93	92

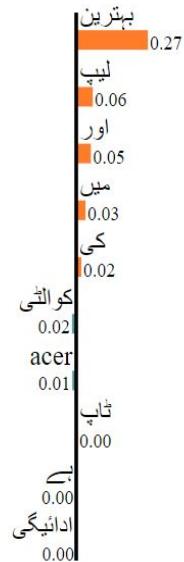
IMPLEMENTATION OF EXPLAINABLE AI

Prediction probabilities



NOT Positive

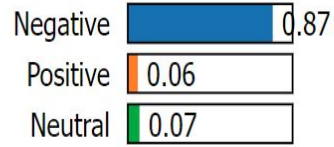
Positive



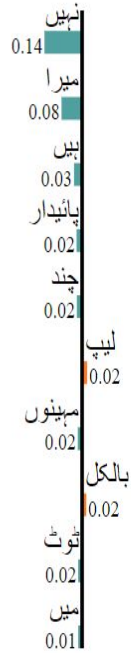
Text with highlighted words

بہترین ہے acer لیپ ٹاپ کی کوالٹی اور ادائیگی میں

Prediction probabilities



NOT Positive

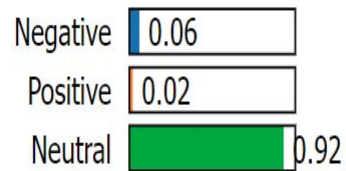


Positive

Text with highlighted words

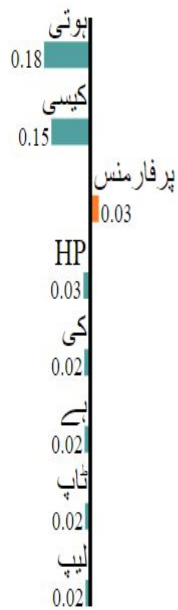
لیپ ٹاپ بالکل بھی پائیدار نہیں ہیں میرا چند مہینوں میں ٹوٹ گیا اسus

Prediction probabilities



NOT Positive

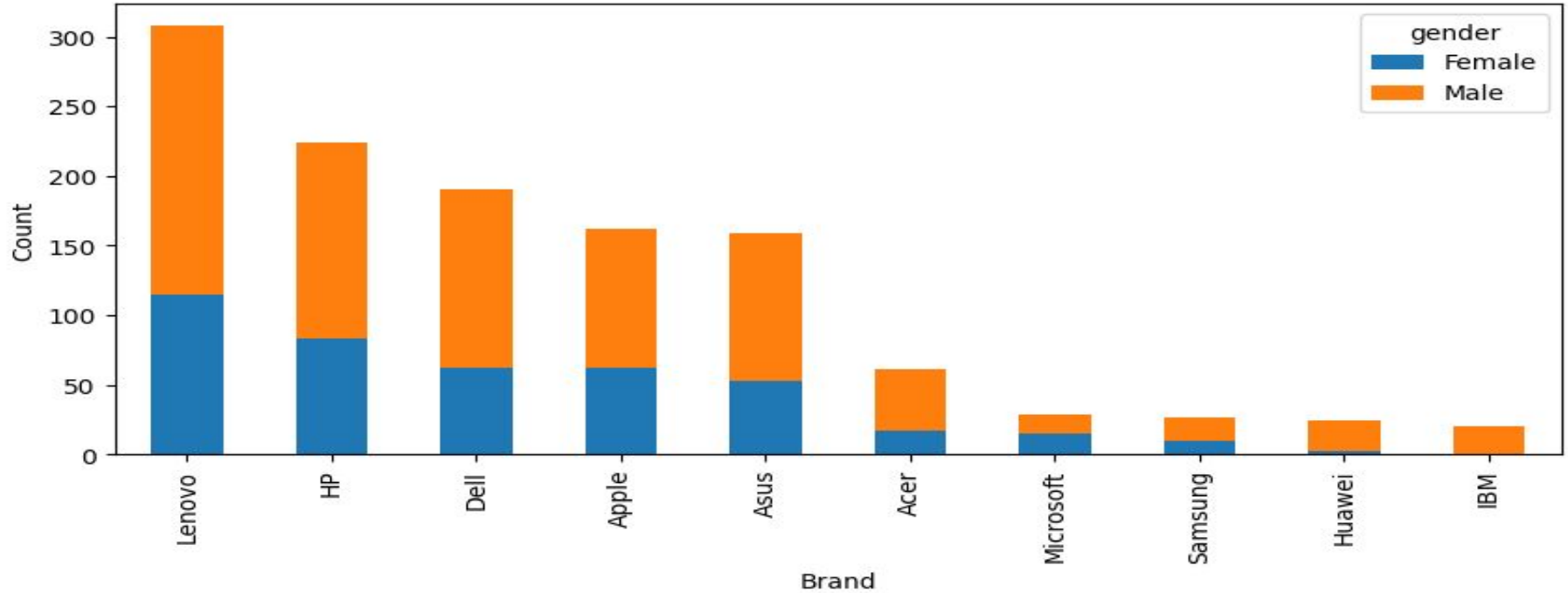
Positive



Text with highlighted words

HP کی پرفارمنس کیسے ہوتی ہے

DEMAND ANALYSIS



CONCLUSION & FUTURE DIRECTION

- Utilize Various NLP techniques to Analysis Market Demand In Urdu language.
- This information informs business strategies in a competitive market.
- Discussing future plans, including expanding to other languages and laptop model names.
- Mentioning the exploration of additional variables for demand analysis.

THANK YOU