2632 : GENERATIVE AI RECOMMENDATION SYSTEM IN E-COMMERCE

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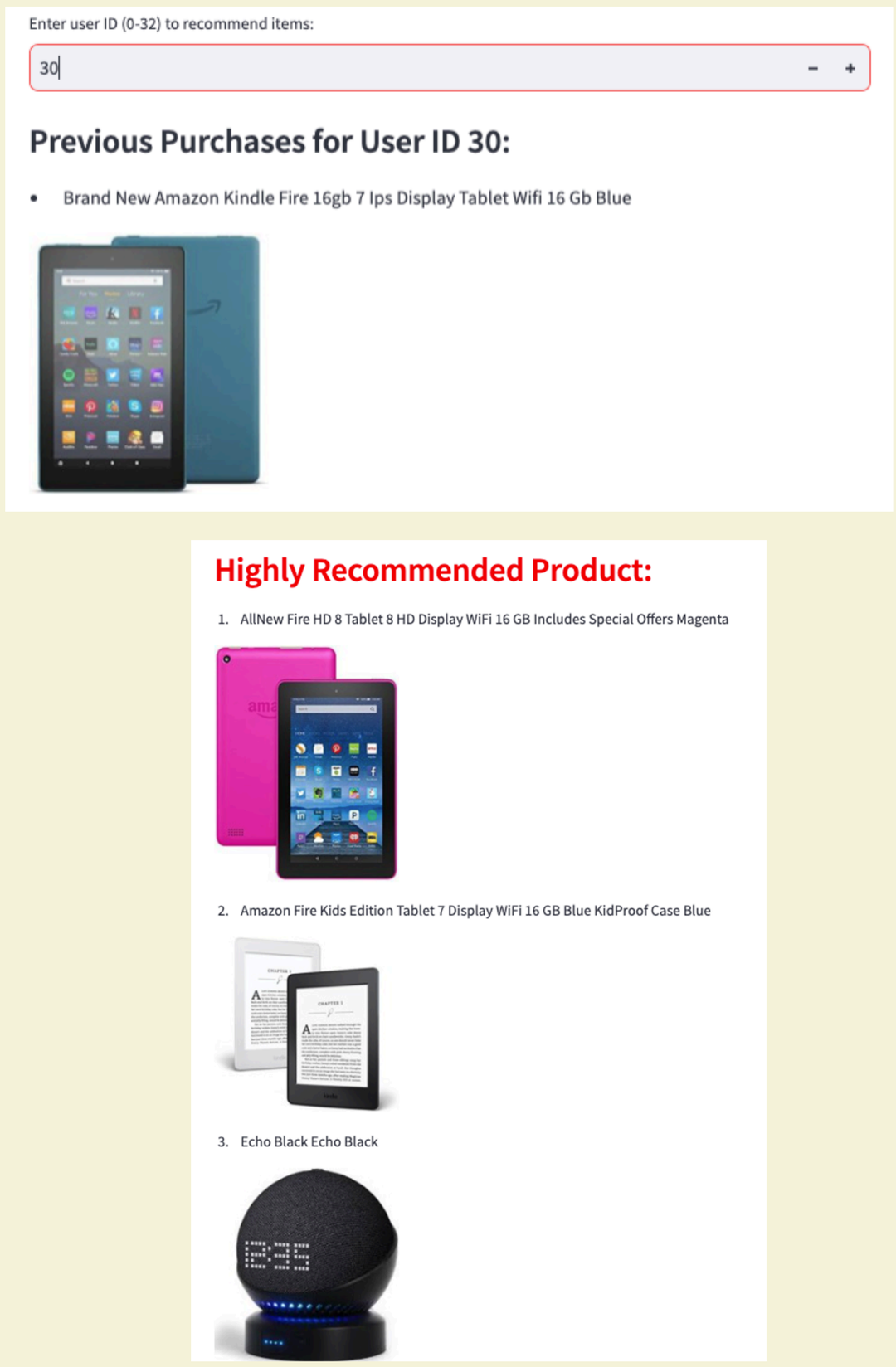
ABSTRACT

A generative AI recommender system in e-commerce leverages advanced algorithms to generate personalized recommendations. It optimizes the shopping experience by understanding user preferences more accurately than traditional methods. Results show significantly improved performance, achieving higher user satisfaction compared to traditional methods.

PROJECT OBJECTIVES

1) To explore various Generative AI in recommendation system
2) To design and implement the selected Generative AI
3) To evaluate the algorithm through user testing or performance evaluation

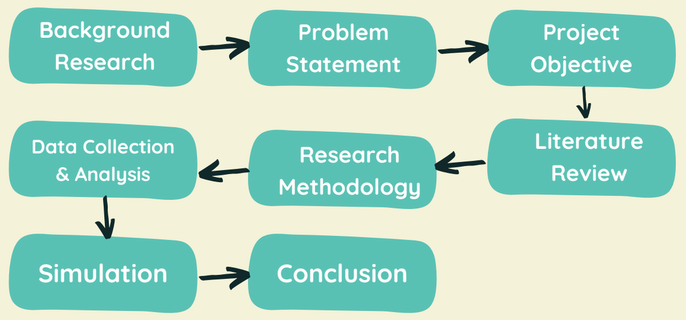
IMPLEMENTATION



LITERATURE REVIEW

AUTHOR	TECHNIQUE	FINDINGS
Lacic et al., 2020	Autoencoder	Applied AE to understand and represent job-related recommendation by using AE & VAE. VAE more accurate. Using MRR, EPD, EDC & NDCG to evaluate.
(Reddy & Kumar, 2023)	CNN-Bi-LSTM Model	Enhance accuracy & transparency by using pre-trained CNN models and Bi-LSTM for ratings. Achieve higher accuracy, recall, user coverage. Using Accuracy, Recall and User Coverage to evaluate
(Sachdeva et al., 2019)	VAE, CF, RNN	Introduced improved version of VAE by consider the order & timing of activities like watching movies compared to history. Using NDCG, Precision & Recall to evaluate.

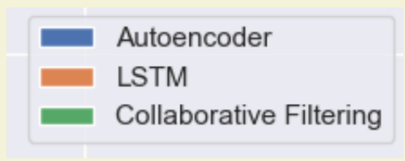
RESEARCH METHODOLOGY



Prototype Demo Programming languages & UI implementation :

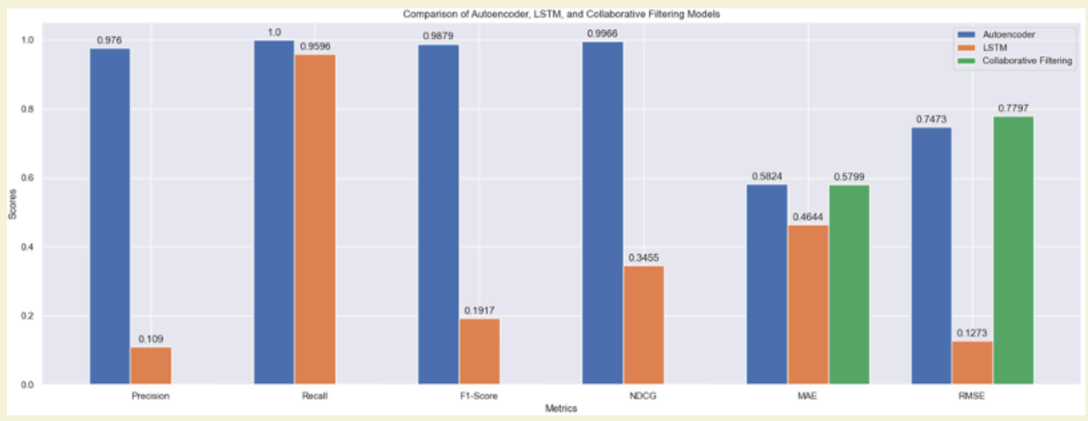
MODEL COMPARISON RESULT

Model:



Evaluation Metrics:

- MAE
- RSME
- NDCG
- PRECISION
- RECALL
- F1-SCORE



- Autoencoder model gives the best result hence, system use Autoencoder model for the recommendation.

CONCLUSION & FUTURE WORK

The recommendation system's implementation has improved significantly by using selected generative AI compared to traditional method. Result obtained also highly impressive by using few of evaluation metrics and the implementation of user interface prototype are done using streamlit. Upcoming projects will concentrate on integrating real-time data, investigating more AI methods, such as GANs and VAEs. Priorities include improving the user interface, taking user comments, and making sure that security and scalability are met. The system will be further refined through robust implementation, collaborative research, and cross-domain suggestions.

PUBLICATIONS

paper #1571018687 ('Generative AI Recommender System in E-Commerce') for CITIC 2024 has been accepted for presentation in Track 1 - Artificial Intelligence & Machine Learning.

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