CSP 571 – Data Preparation and Analysis
Project - Group & Topic

Project Group

Please provide the following information regarding the project group members:

• A list of project group members.

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• A designated project group leader - Shreeram Venkatesh

Project Topic Please provide the following information regarding the project topic area:

• Application subject area (e.g., astronomy, biology, social services, etc.)

Project title based on Ecommerce Analysis and Recommendations

Abstract:

This project uses an e-commerce dataset to analyze customer behavior and build a recommendation system in R. It begins by preparing the data and conducting exploratory analysis to understand customer segments and product trends. The main focus is on creating a recommendation system that provides personalized product suggestions to users. The project aims to improve user satisfaction, increase conversion rates, and enhance business growth by leveraging data analysis and machine learning techniques. The insights gained and the recommendation system's potential make this project a valuable resource for optimizing e-commerce platforms.

Data Analysis and Business Intelligence: This analysis involves data-driven approaches to understand customer behavior and optimize conversion rates, making it a part of the broader field of data analysis and business intelligence.

Digital Marketing and Customer Engagement: The recommendations generated through this analysis can have a significant impact on digital marketing strategies and customer engagement in the context of e-commerce.

Machine Learning and Predictive Analytics: Machine learning techniques are mentioned as a part of the analysis, indicating that this topic also falls under the domain of machine learning and predictive analytics.

Web Analytics and User Experience Optimization: Understanding user behavior on the e-commerce website and making recommendations for optimization aligns with web analytics and user experience optimization.

Business Strategy and Decision Making: The ultimate goal of this analysis is to provide recommendations for improving business performance, making it relevant to business strategy and decision-making.

• Specific data set and sources (e.g., Kaggle, Google Public Datasets, etc.)

Dataset link -

https://www.kaggle.com/datasets/mkechinov/ecommerce-events-history-in-cosmetics-shop

https://www.kaggle.com/code/annettecatherinepaul/ecommerce-analysis-and-recommendations

https://www.kaggle.com/mkechinov/ecommerce-behavior-data-from-multi-category-store

https://www.kaggle.com/mkechinov/ecommerce-purchase-history-from-electronics-store

https://www.kaggle.com/mkechinov/ecommerce-events-history-in-cosmetics-shop

https://www.kaggle.com/mkechinov/ecommerce-purchase-history-from-jewelry-store

• **Reference resources (e.g., Articles, Papers, Existing Works, etc**.)

[1] S. Jain and P. Hegade, "E-commerce Product Recommendation Based on Product Specification and Similarity," 2021 International Conference on Innovation and Intelligence for Informatics, Computing, and Technologies (3ICT), Zallaq, Bahrain, 2021, pp. 620-625, doi: 10.1109/3ICT53449.2021.9581471.

[2] Z. Guangqian and L. Caihua, "Study on E-commerce recommendation based on content analysis," 2011 International Conference on E-Business and E-Government (ICEE), Shanghai, China, 2011, pp. 1-4, doi: 10.1109/ICEBEG.2011.5885294.

[3] L. Li, "E-Commerce Data Analysis Based on Big Data and Artificial Intelligence," 2019 International Conference on Computer Network, Electronic and Automation (ICCNEA), Xi'an, China, 2019, pp. 133-138, doi: 10.1109/ICCNEA.2019.00034.

[4] H. Khatter, S. Arif, U. Singh, S. Mathur and S. Jain, "Product Recommendation System for E-Commerce using Collaborative Filtering and Textual Clustering," 2021 Third International Conference on Inventive Research in Computing Applications (ICIRCA), Coimbatore, India, 2021, pp. 612-618, doi: 10.1109/ICIRCA51532.2021.9544753.