Machine Learning Project Topics

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Assignment part 1

📓 Topic 1: Book Recommendation System

1. Is the Dataset Available?

Yes, the dataset is available on Kaggle and contains information about books, users, and their ratings.
🔗 **Dataset Link:** https://www.kaggle.com/datasets/arashnic/book-recommendation-dataset

2. Why This Topic?

a. Real-World Relevance

Recommendation systems are integral to platforms like Amazon and Goodreads, enhancing user experience by suggesting relevant products.

b. Rich Dataset

The dataset includes three CSV files—Books, Users, and Ratings—providing a comprehensive foundation for building a recommendation model.

c. Skill Development

Working on this project will help develop skills in:

- Collaborative Filtering
- Content-Based Filtering
- Data Preprocessing
- Machine Learning Algorithms

d. Application in Digital Marketing

Understanding recommendation systems is valuable for digital marketers aiming to personalize user experiences and increase engagement.

3. Most Relevant Research Paper

Title: *A Survey of Collaborative Filtering Techniques*
Overview: This paper reviews various collaborative filtering methods, discussing their applications and challenges in building effective recommendation systems.

🔗 https://www.academia.edu/45291250/A_Survey_of_Collaborative_Filtering_Techniques
📥 Download PDF

🚗 Topic 2: Vehicle Dataset Analysis (CarDekho)

1. Is the Dataset Available?

Yes, the dataset is available on Kaggle and includes details about used cars such as price, model, year, fuel type, and more.
🔗 **Dataset Link:** https://www.kaggle.com/datasets/nehalbirla/vehicle-dataset-from-cardekho

2. Why This Topic?

a. Automotive Industry Relevance

Analyzing vehicle data helps understand market trends, pricing strategies, and consumer preferences in the automotive sector.

b. Practical Use Cases

Potential applications include:

- Predicting car prices using machine learning
- Identifying factors affecting resale value
- Assisting buyers and sellers in making informed decisions

c. Technical Learning Opportunities

This project offers experience in:

- Regression Analysis
- Feature Engineering
- Model Evaluation Metrics

d. Marketing Insight

Insights gained can aid in developing targeted marketing strategies for car dealerships and online automotive platforms.

3. Most Relevant Research Paper

Title: *Car Price Prediction Using Data Science and Machine Learning*
Overview: This study focuses on developing a machine learning model, specifically utilizing linear regression, to predict used car prices based on various features.

https://www.irjmets.com/uploadedfiles/paper/issue_5_may_2024/55247/final/fin_irjmets1714900105.pdf

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