MUSIC RECOMMENDATION SYSTEM USING AI/ML

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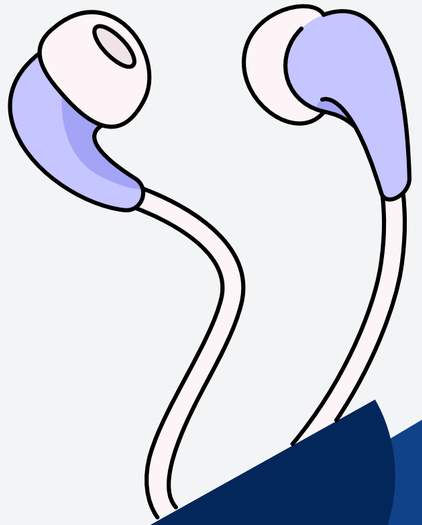
INTRODUCTION

- Growing popularity of music streaming platforms
- Challenges in music discovery due to large datasets
- Role of recommendation systems in personalized music delivery
- Brief overview of AI/ML in recommender systems



PROBLEM STATEMENT

1. Users struggle to find music tailored to their tastes
2. Need for an intelligent system that suggests relevant songs
3. Improve user satisfaction and engagement on music platforms

OBJECTIVE

1. Build a system that recommends songs based on user preferences
2. Use AI/ML techniques for accurate recommendations
3. Develop a user-friendly interface for easy interaction
4. Evaluate system performance with suitable metrics

DATASET DESCRIPTION

- Source of dataset (e.g., Million Song Dataset, Kaggle)
- Data types: song features (genre, tempo, loudness), user ratings
- Size of dataset and sample statistics
- Data fields description

METHODOLOGY

- Explain the two main approaches:
  - Content-Based Filtering
  - Collaborative Filtering
- Brief workflow diagram showing data flow: raw data → preprocessing → model → recommendations

DATA PREPROCESSING

- Handling missing values
- Feature normalization
- Encoding categorical data (genres, artists)
- Splitting dataset for training/testing

APPROCHES

Content-Based Filtering

- Concept: recommending songs similar to user’s liked songs
- Use of song features to compute similarity (e.g., cosine similarity)

Collaborative Filtering

- Concept: recommending songs based on preferences of similar users
- Matrix factorization using SVD
- Handling sparse data

IMPLEMENTATION

- Tools & technologies: Python, pandas, scikit-learn, Streamlit/Tkinter
- Model training process
- Integration of models into UI
- Demo screenshots (if available)

CONCLUSION

1. Recap of the system and its goals
2. Importance of AI/ML in music recommendation
3. Summary of results and impact on user engagement
4. Final thoughts

THANK YOU