



MOODIFY

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OUTLINE

- Abstract
- Problem Statement
- Aims, Objective & Proposed System/Solution
- System Design/Architecture
- System Development Approach (Technology Used)
- Algorithm & Deployment
- Conclusion
- Future Scope
- References
- Video of the Project

ABSTRACT

- This project aims to develop a mood-based music recommendation system that leverages machine learning algorithms to analyze and understand a user's emotional state, subsequently recommending songs, genres, artists, and playlists that align with their current mood.
- The primary outcome is an intelligent music recommendation engine that enhances user experience by offering emotionally resonant music choices, leading to higher user satisfaction and engagement on music streaming platforms.
- This system has the potential to transform user interactions with music, providing not only entertainment but also emotional support, improving mental well-being, and creating a more immersive listening experience.

PROBLEM STATEMENT

- Existing music recommendation systems primarily rely on historical user data and preferences to generate recommendations. However, these systems often fail to adapt to the user's current emotional state, leading to recommendations that may not align with the user's mood or preferences at the moment. This lack of real-time emotional context limits the effectiveness of music recommendations and hinders user satisfaction. There is a need for a music recommendation system that can dynamically adjust recommendations based on the user's emotional state to provide a more personalized and engaging experience.

AIM AND OBJECTIVE

AIM

- The aim of this project is to develop a mood-based music recommendation system that considers the user's emotional state to recommend songs, genres, artists, and playlists using machine learning techniques. The system will dynamically adapt to changes in the user's mood in real-time, providing personalized music recommendations that resonate with the user's emotions.

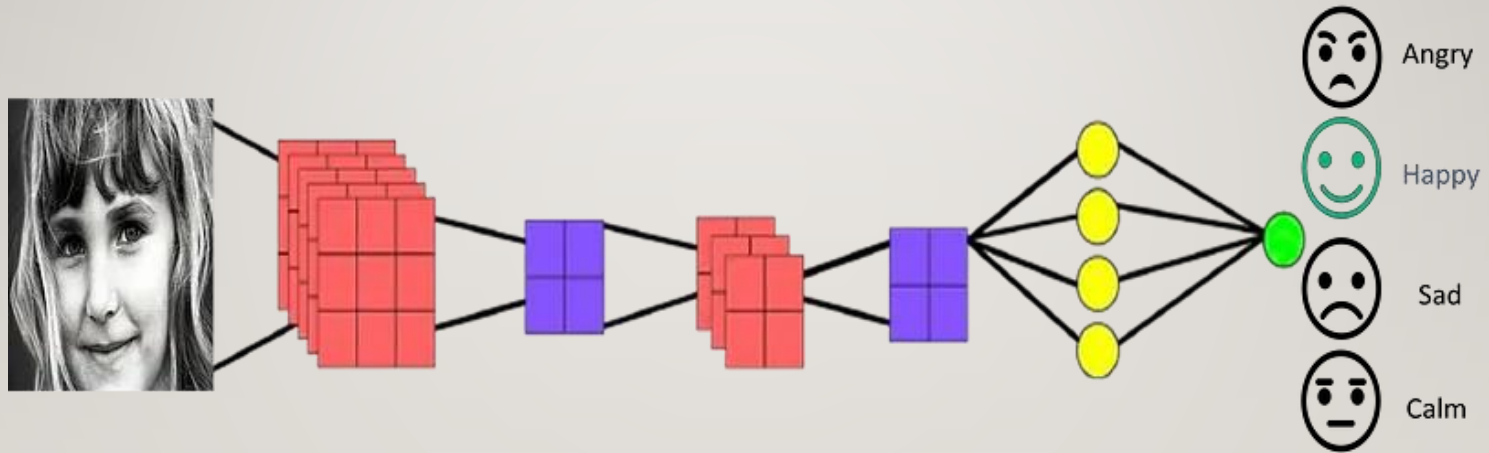
OBJECTIVE

- Real-Time Mood Analysis
- Personalized Recommendations
- User Engagement and Satisfaction

PROPOSED SOLUTION

- Data Collection
- Machine Learning Models
- Music Recommendation Engine
- Feedback Mechanism

SYSTEM ARCHITECTURE



SYSTEM DEPLOYMENT APPROACH

- Data Collection and Preprocessing.
- Machine Learning Model Selection
- Model Training and Evaluation
- Integration and Deployment
- User Feedback Loop

ALGORITHM & DEPLOYMENT

ALGORITHM

- Data Representation
- Model Architecture
- Training
- Prediction

DEPLOYMENT

- Containerization
- Orchestration
- API Development
- Continuous Integration/Continuous Deployment (CI/CD)

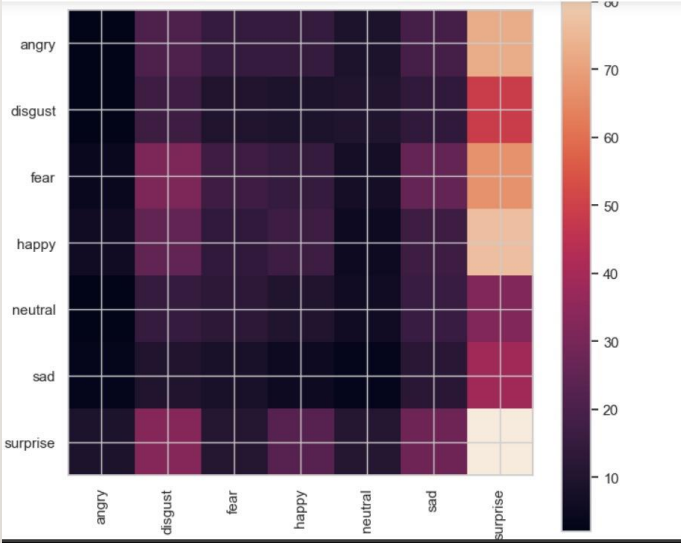
CONFUSION MATRIX

Confusion Matrix

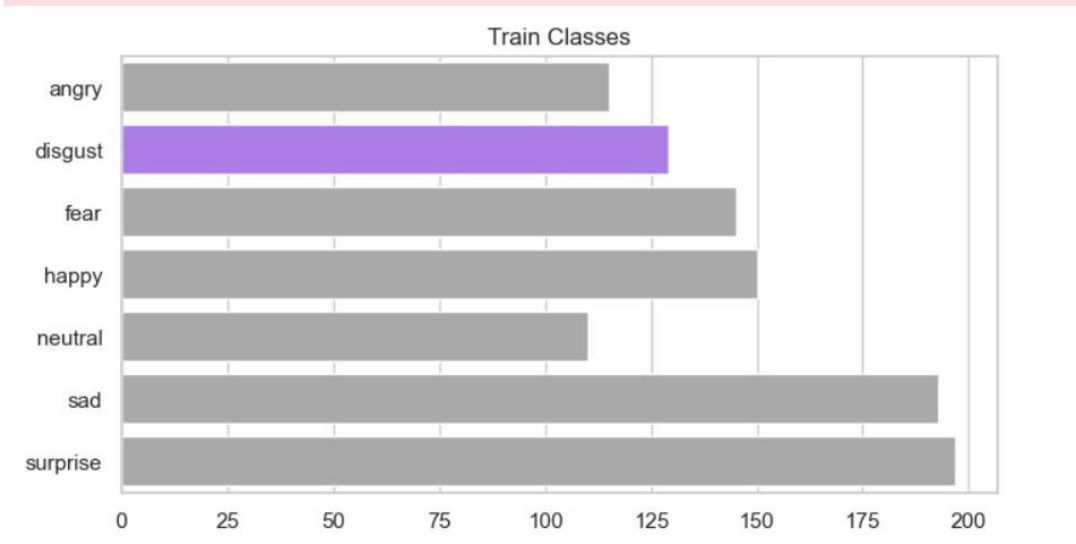
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[[ 2 21 15 15  9 19 73]
 [ 2 17 10  9 10 14 49]
 [ 4 31 17 15  7 26 67]
 [ 6 25 14 17  5 17 77]
 [ 2 15 13 10  6 16 32]
 [ 3 10  8  5  3 12 39]
 [ 9 33 11 23 11 28 87]]
```

Classification Report

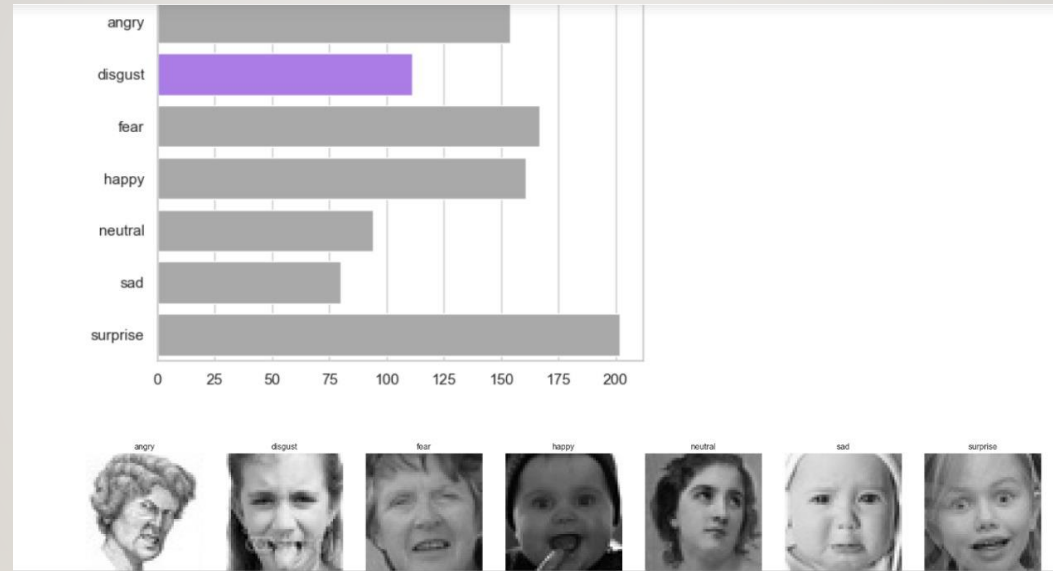
	precision	recall	f1-score	support
angry	0.07	0.01	0.02	154
disgust	0.11	0.15	0.13	111
fear	0.19	0.10	0.13	167
happy	0.18	0.11	0.13	161
neutral	0.12	0.06	0.08	94
sad	0.09	0.15	0.11	80
surprise	0.21	0.43	0.28	202
accuracy			0.16	969
macro avg	0.14	0.15	0.13	969
weighted avg	0.15	0.16	0.14	969



TRAIN CLASSES

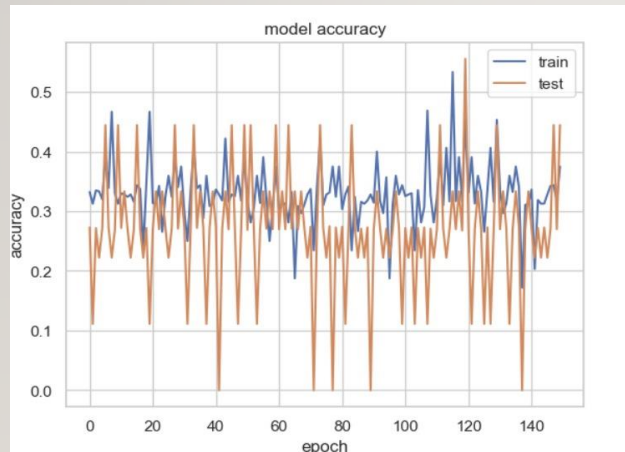


TEST CLASSES

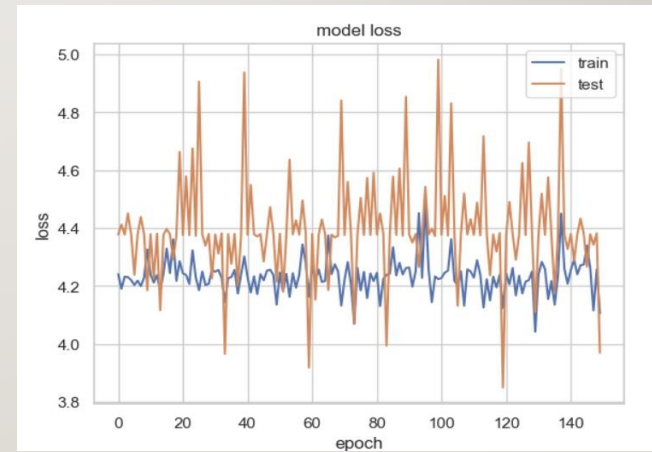


MODEL ACCURACY & LOSS

MODEL ACCURACY



MODEL LOSS



RECOMMENDED SONGS BASED ON MOOD

	index	name	artist	mood
0	241	Honey, This Mirror Isn't Big Enough for the Tw...	My Chemical Romance	Energetic
1	237	Holding On	Scary Kids Scaring Kids	Energetic
2	176	Faces	Scary Kids Scaring Kids	Energetic
3	432	Pressure	Seth Hills	Energetic
4	269	Inside the Fire	Disturbed	Energetic

CONCLUSION

- The development of a mood-based music recommendation system using machine learning techniques presents an exciting opportunity to enhance the music listening experience for users. By incorporating real-time mood analysis, the system can provide personalized recommendations that align with the user's emotional state, leading to increased engagement and satisfaction.
- Through the integration of diverse data sources, advanced machine learning algorithms, and continuous refinement based on user feedback, the proposed system has the potential to deliver highly relevant and emotionally resonant music recommendations. Deploying the system with scalable infrastructure and intuitive user interfaces further enhances its accessibility and usability.
- In conclusion, the mood-based music recommendation system represents a significant advancement in personalized music recommendation technology, catering to the diverse emotional needs and preferences of users in the digital age.


FUTURE SCOPE





- Integration with Wearable Devices
- Multimodal Data Fusion
- Context-Aware Recommendations
- Long-Term User Modeling
- Emotionally Intelligent Interfaces

REFERENCE

- <https://medium.com/@UTMSBA24/mood-based-music-recommendation-system-5afb8bb90082>
- https://www.linkedin.com/pulse/clustering-my-spotify-songs-mood-prediction-romero-solano?utm_source=share&utm_medium=member_android&utm_campaign=share_via
- <https://www.semanticscholar.org/paper/Music-Mood-Prediction-Based-on-Spotify%E2%80%99s-Audio-Dalida-Aquino/b59876b0b45078c8ba7acef87aaaf42a8832c75e>

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README

Moodify

Mood-based music recommendation system that considers a user's emotional state to recommend songs, genres, artists and playlists using Machine learning

About

Mood-based music recommendation system that considers a user's emotional state to recommend songs, genres, artists and playlists using Machine learning

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