Information Technology

Music Recommendation Based On Face Emotion Recognition

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Content

Introduction

- Music has always been a powerful tool for conveying emotions, whether through the lyrics or the melody itself.
- But what if we could take this one step further? What if we could use technology to recommend music based on our emotions in real-time?
- This is where face emotion recognition comes in. By analyzing facial expressions, we can determine a person's emotional state and use that information to suggest music that matches their mood.
- Imagine listening to a playlist that perfectly captures how you're feeling right now.
- Face emotion recognition is a technology that uses artificial intelligence to analyze facial expressions and identify emotions such as happiness, sadness, anger, and surprise.

Motivation

- Music recommendation systems can accurately determine a user's emotional state and suggest songs that match their mood.
- Furthermore, studies have shown that music can have a significant impact on our emotions and well-being.
- For example listening to sad music can actually make us feel happier by eliciting feelings of empathy and catharsis.
- Music recommendation systems can take into account these nuances and provide more personalized recommendations based on the user's emotional state.

Problem Statement

Develop a system that presents a cross-platform music player, which recommends music based on the real-time mood of the user through a web camera using Machine Learning Algorithms.

Literature Survey

1. "Music Emotion Recognition: A State of the Art Review" by Yi-Hsuan Yang, et al. (2014) - This paper provides of emotion recognition in music, including techniques for recognizing emotional content in audio and lyrics.
2. "Deep Learning for Music Emotion Recognition: A Review" by Wenwu Wang, et al. (2019) - This covers the application of deep learning techniques in music emotion recognition, which is a fundamental component of emotion-based music suggest systems.
3. "Emotion-Based Music Recommendation: A Survey" by Zhao, Shuo, et al. (2019) - While it may not focus on facial emotion recognition, this survey provides into the broader field of emotion-based music recommendation, including the use of various emotion recognition modalities.
4. "Multimodal Music Emotion Recognition: A Survey" by Soleymani, Mohammad, et al. (2018) - This survey discusses the use of multiple modalities, including audio, lyrics, and visual cues, for music emotion recognition detect by facial expressions.

System Architecture

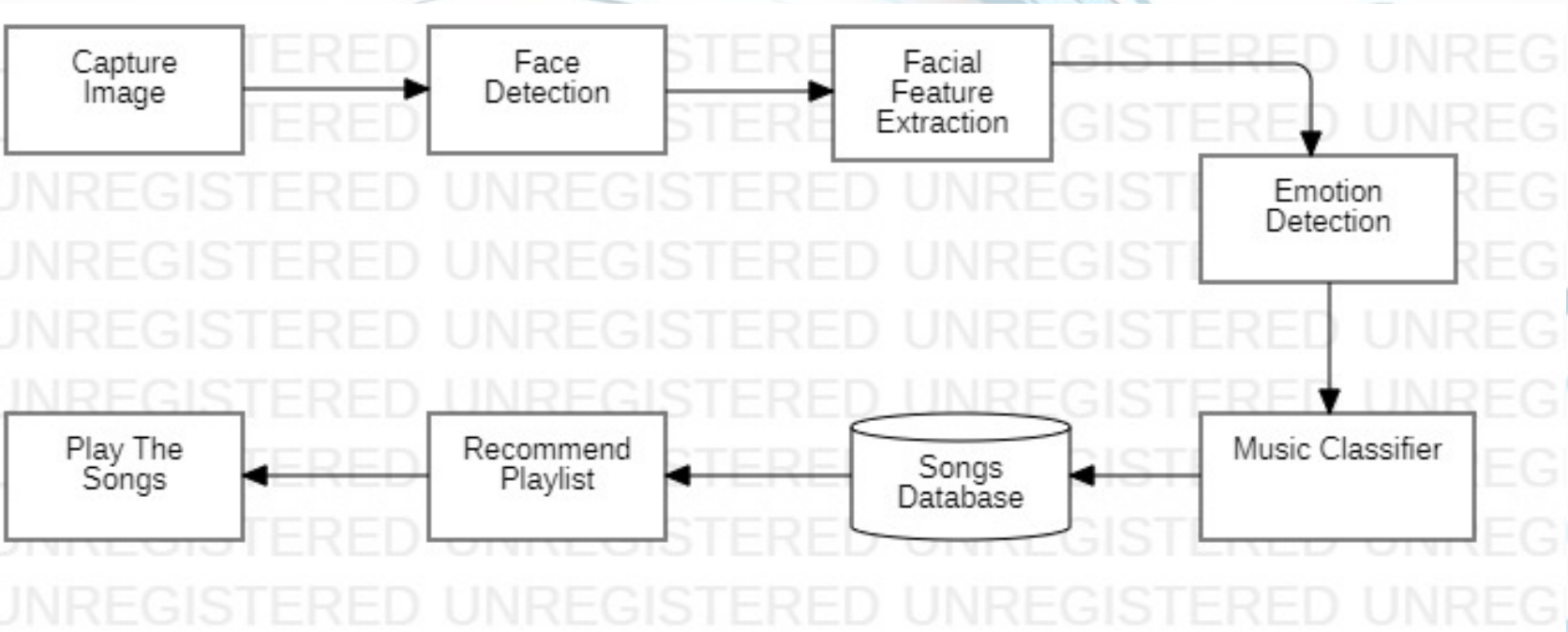

Figure: System Architecture

Use-case Diagram

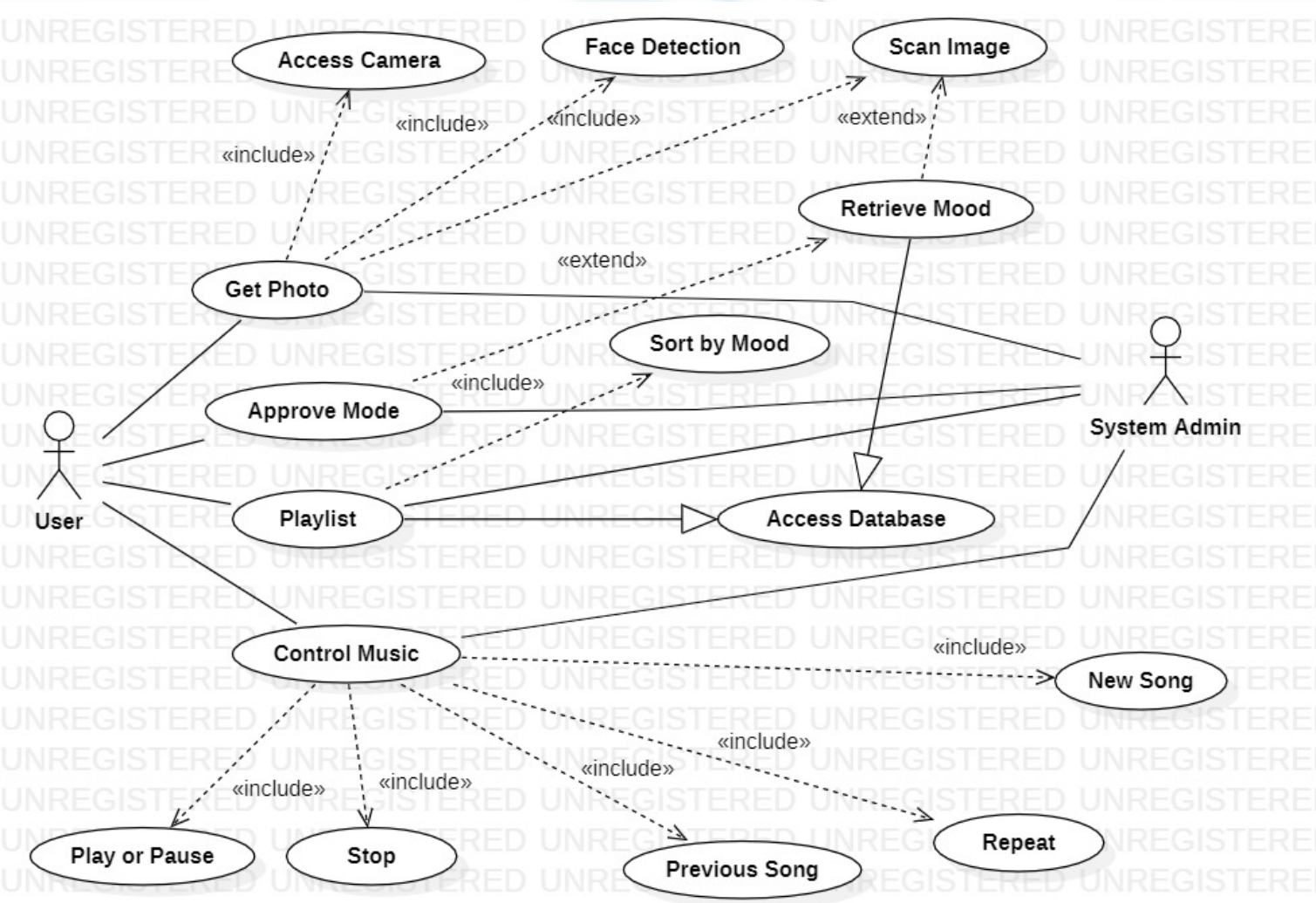

Fig. UseCase Diagram For Music Based On Face Emotion

Sequence Diagram

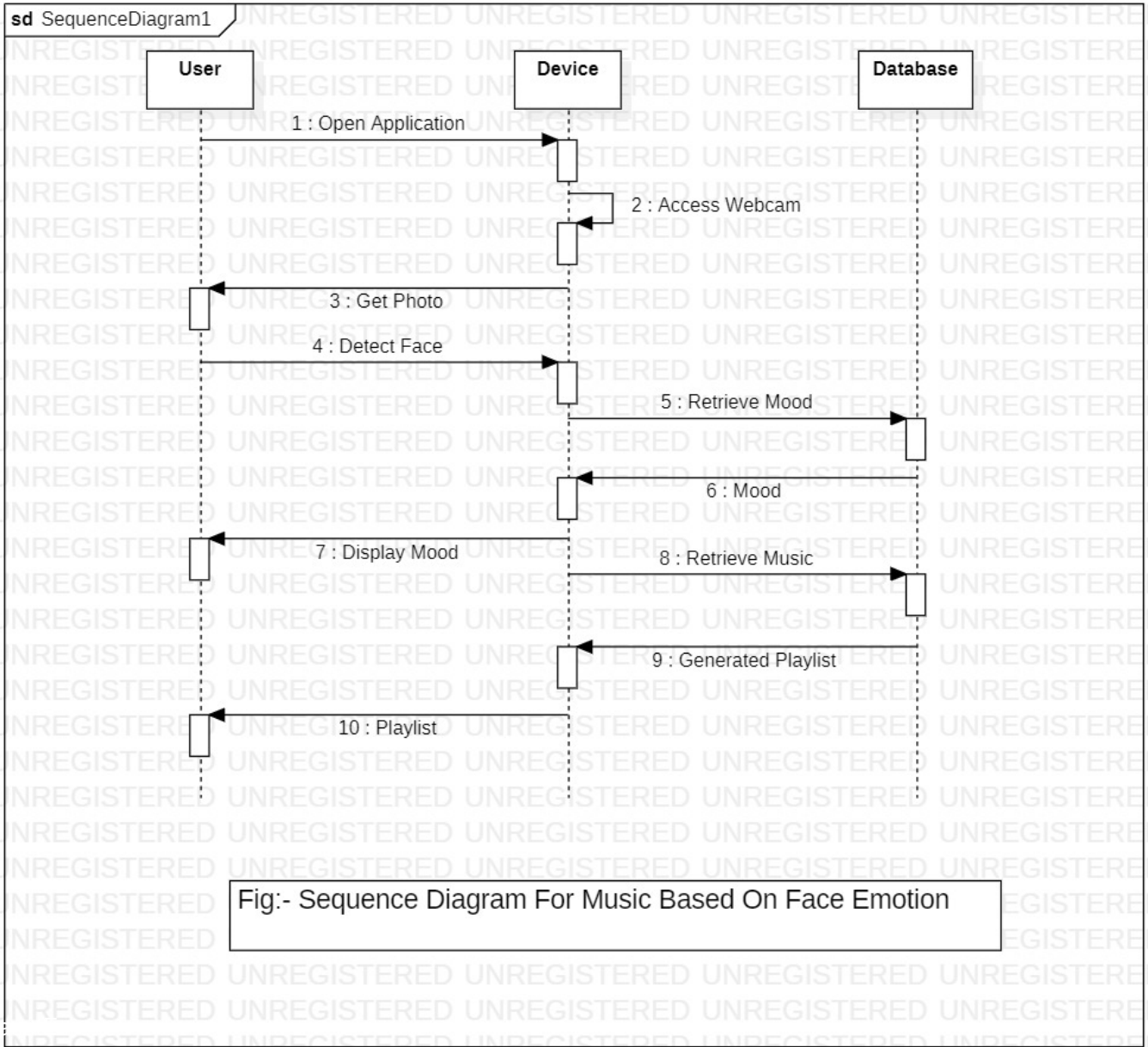

Fig:- Sequence Diagram For Music Based On Face Emotion

Software And Hardware Requirements

SOFTWARE REQUIREMENTS

- OS: Windows 7 and above /UBUNTU
- Programming Language: Python
- Software: JetBrains PyCharm Community Edition 2017.1.4 x64
- Backend: Keras
- Additional requirements: TensorFlowTech

Tech Stack:

- Keras
- Tensorflow
- Spotify
- Tkinter (For testing)
- Flask

HARDWARE REQUIREMENTS

- RAM: 8 GB Or Above
- Internal Storage: 8 GB Or Above

Conclusion

In conclusion, music recommendation based on face emotion recognition has the potential to revolutionize the way we listen to music emotions such as happiness, sadness, anger, and surprise. music can be tailored to enhance our mood and improve our overall well-being.this technology have practical applications in industries such as healthcare and entertainment, but it also opens up new avenues for research into the relationship between music and emotions.

Thank You!