



## Project requirements

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Community & UN SDG(s):	Individual participation/Serving a context Community: Individuals seeking to understand and manage their own emotions for personal well-being. Family members and friends wanting to support their loved ones in emotional struggles.
	<b>UN SDGs: 3 &amp; 4</b>
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<b>Project Name</b>	EmoDetect
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### Functional Requirements

- 1. Emotion Recognition:** The system should accurately categorize and differentiate emotions from user inputs, targeting six key states: Happy, Sad, Fear, Neutral, Surprise, and Angry.
- 2. Personalized Recommendation Engine:** The system should provide tailored recommendations that are user-specific and align with the identified emotional state.
- 3. Multi-Emotion Recognition:** The application should recognize a wide range of emotions or at least the six emotions.
- 4. Real Time Recommendation:** The system should generate and provide recommendations in real-time, mirroring the user's immediate emotional state.
- 5. User Interface:** The application should have a user-friendly design which allows the user to navigate tasks easily such as getting their emotion recognition and recommendations.
- 6. Cross-Platform Compatibility:** The application should work on all devices that support a browser.
- 7. User Authentication:** The application should secure user integrity and use high encryption methods to avoid malicious use of the user's data.

### Technical/Performance Requirements

#### Infrastructure:

- **Conda:** Environment and package management
- **Python:** Primary language for development
- **Jupyter Notebooks:** Environment for compiling and running the source code
- **Haarcasde Algorithm:** Face detection algorithm
- **Open CV:** Open source library for video processing
- **DeepFace:** Face recognition library
- **Flask:** Web framework to deploy the application
- **Youtube Algorithm:** To provide meditation recommendations based on the identified emotion
- **Google Places API:** location-based recommendations for restaurants, parks, and other venues depending on the user's emotion.

#### Performance Metrics:

- **Latency:** Ensure emotion detection and recommendation is provided under 10 seconds.
- **Efficiency:** Optimize the system for minimal gpu usage.