

ARTIFICIAL INTELLIGENCE PROJECT PROPOSAL

“Real-time Emotion Detection using Machine Learning”

SECTION A MEMBERS

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Project Details:

The goal of this project is to build a machine learning model that can detect emotions from camera input in real-time. Our model will be trained on a dataset of labeled images and videos, and will use various computer vision and machine learning techniques to accurately classify emotions such as happiness, sadness, anger, and surprise. The final output will be displayed on the screen along with the detected emotion written beside the face.

Methodology:

The project will start by gathering a set of data, which may be obtained from public sources or recorded directly for the project. The collected images and videos will then be processed under several steps to prepare them for analysis. A machine learning model will be built to analyze the preprocessed data and will be trained with a suitable algorithm, such as CNN (Convolutional Neural Network) and SVM (Support Vector Machine) . We will check how well the model performs by measuring its accuracy, precision, recall, and F1 score. Once we are happy with our model, we will set it up to work in real-time, which means it will be able to analyze new images and videos as they come in. We will use a programming language and library like Python and OpenCV to make sure the model can be used on a variety of devices.

Motivation:

Emotion detection applications have a wide range of users in different areas, such as healthcare, education, and entertainment. It allows the healthcare providers to monitor the mental health and well-being of the patients to prevent development of depression and anxiety from an early stage. In education, it can be used by the teachers to read the expressions of the students to get real-time feedback on their teaching methods .Furthermore, emotion detection technology can enhance the user experience in gaming, virtual reality, and other immersive environments. By developing a real-time emotion detection system, we can showcase the potential of this technology and contribute to its advancement in various fields.

Future Plans:

In the future, we plan to expand the project by incorporating additional features such as facial expression recognition, gender classification, and age estimation. Furthermore, we will investigate the ethical implications of emotion detection technology and consider ways to mitigate any potential harms or biases. Ultimately, we hope to contribute to the development of more robust and responsible emotion detection systems.