**Analyzing Grammatical Facial Expressions  
Milestone: Final Project Proposal**

Group 9

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**Project Proposal**

**IE 7275: Data Mining in Engineering**

**Problem Setting**:

Facial expressions are highly indicative of nonverbal communication cues that play crucial role in interpersonal relations. Primarily we will be focusing on developing a recommender system for playing music based on the mood of the user by comprehending their facial expressions. Challenges that can be faced are capturing the face of the user accurately to predict their mood.

**Problem definition**:



The goal is to create a recommendation system for popular music streaming platforms like Spotify based on not only user history but also their mood. To do so we will first recognize the mood and classify it into 9 target classes from a dataset generated by using Microsoft Kinect to obtain an image of each frame, identified by a timestamp.

**Data Sources**:



UCI machine learning repository:

This dataset supports the development of models that make possible to interpret Grammatical Facial Expressions from Brazilian Sign Language (Libras).This dataset was already used in the experiments described in Freitas et al in 2014.

Link: <https://archive-beta.ics.uci.edu/ml/datasets/grammatical+facial+expressions>

**Data Description**:

Datapoints files: Coordinates x and y are given in pixels. Coordinates z are given in millimeters.

|  |  |  |
| --- | --- | --- |
| **Feature (x, y, z)** | **Description** | **Number of Rows** |
| 0-7 | left eye | 27965 |
| 8-15 | right eye | 27965 |
| 16-25 | left eyebrow | 27965 |
| 26-35 | right eyebrow | 27965 |
| 36-47 | nose | 27965 |
| 48-67 | mouth | 27965 |
| 68-86 | face contour | 27965 |
| 87 | left iris | 27965 |
| 88 | right iris | 27965 |
| 89 | nose tip | 27965 |
| 90-94 | line above left eyebrow | 27965 |
| 95-99 | line above right eyebrow | 27965 |