### **Group Number:** 11

**Meeting Time:**  8th April 3:30 PM

**Project Name: Facial Emotion Recognition using CNN**

**Project Proposal (200 words max):** We propose to build a deep learning model to recognize human emotions from facial expressions using Convolutional Neural Networks (CNNs). The model will classify facial images into one of several emotion categories such as happy, sad, angry, and surprised. We will use the FER2013 dataset, which contains labeled grayscale face images, to train and evaluate our model. This project involves preprocessing facial data, building a CNN architecture, training the model, and evaluating its performance using accuracy and confusion matrix. The goal is to develop an intuitive and efficient facial emotion classifier that can be further integrated into applications like mental health monitoring or human-computer interaction.

**Dataset(s) being considered:**

<https://www.kaggle.com/datasets/msambare/fer2013>

**GitHub Repository Link:** [**AyerDaniel/ds677: Deep Learning Project 2025**](https://github.com/AyerDaniel/ds677)

**Work Split Details:**

#### Ganesh – Model Development & Training

* Design and implement the CNN architecture for emotion classification.
* Handle training pipeline (model training, validation loop).
* Tune hyperparameters (e.g., learning rate, optimizer, dropout).
* Track training progress with accuracy and loss curves.

#### Vijaya – Data Handling & Evaluation

* Preprocess the FER2013 dataset (normalization, augmentation, splitting).
* Visualize class distributions and sample images.
* Implement evaluation metrics (accuracy, precision, recall, F1-score).
* Generate confusion matrix and visual reports.

#### Jyotsna – Documentation & Deployment

* Maintain GitHub repository with clean and updated code.
* Document methodology, architecture, and results in a report.
* Create the final presentation slides.