CSCN8010-Foundations of Machine Learning  
Assignment-1 Project Proposal  
Final Project (Group-8)  
Nirup Makwana - 8931418

**Problem Statement:**

Emotions are a crucial part of our day to day lives. Especially when it comes to conveying them in a effective way. While movies can get this done in a efficient manner by actors when it comes to animation it can get a little difficult and hard to maneuver and animate over the course of many frames with animators generally using real life references to draw over. Emotions are a critical part of story telling and accurate emotion classification is critical for storytelling, enhancing user experiences, supporting content creators, and contributing to AI-driven applications such as interactive chatbots and recommendation systems

The goal of this project is to develop a machine learning model (hopefully a CNN) that can classify emotions from anime characters and their images. The model will identify emotions such as happiness, sadness, anger and surprise from a given image.

**Method:**

The project will use the **Anime Faces Dataset** and the **Anime Faces Recognition Dataset** from Kaggle, which contains a myriad of character images. After that the images will be resized and the Convolutional Neural Network model will be deployed. I have not yet decided to use a pretrained model or train one myself as I will be researching on this further moving on. The models performance will be tested on accuracy and F1 score.

**Usage & Applications:**

With this classification content creators and animators can streamline their workflow by automatically tagging and organizing animation scenes based on emotional content, saving time and ensuring consistency across large projects. Overall, this system bridges the gap between technical innovation and creative expression, providing valuable insights and tools for both end-users and industry professionals.

For instance, streaming platforms like Crunchyroll can use this technology to provide personalized assistance and recommendations based on the emotional tone of the previously watched anime. AI driven chatbots can improve user engagement and make the interactions more responsive and make the immersion more human-like.

**Conclusion:**

This project is to combine image classification with the fun and creative domain of animation, offering with a fun and challenging exploration and challenge of a machine learning project. The dataset and the code referenced are all linked below.

**Dataset References:**

1. **Anime Faces Dataset:** <https://www.kaggle.com/datasets/splcher/animefacedataset>
2. **Anime Face Dataset:** <https://www.kaggle.com/datasets/anuragraj03/anime-face-dataset>
3. **Tagged Anime Illustrations-Danbooru2021:** <https://www.kaggle.com/datasets/mylesoneill/tagged-anime-illustrations>
4. **Safebooru - Anime Image Metadata:** <https://www.kaggle.com/datasets/alamson/safebooru>

**(***I might not use all the datasets from here but these are the datasets that I have found out so far*)