Machine Learning Course Project

Please form a group of three and choose one of the following project ideas:

Projects:

Project Idea 1: Twitter Sentiment analysis
Dataset: **https://www.kaggle.com/kazanova/sentiment140**
Or **https://www.kaggle.com/c/twitter-sentiment-analysis2**

Project Idea 2: Hand-drawn Sketch recognition
Dataset: https://sketchy.eye.gatech.edu

Project Idea 3: Limited Vocabulary Speech Recognition
Dataset: https://www.tensorflow.org/datasets/catalog/speech_commands
Relevant paper: **https://arxiv.org/pdf/1804.03209.pdf**

Project Idea 4: Natural Image Classification
Dataset: **https://www.cs.toronto.edu/~kriz/cifar.html**

Project Idea 5: Glass vs No-Glass classification

For this project, students were to determine if a person is wearing glasses or not. However, your test subjects are not real people. A Generative Adversarial Neural Network (GAN) created all of the people that you see in this competition. The GAN network creates these images using a 512 number latent vector. The Kaggle assignment provides both the latent vectors and the faces produced by those vectors. Both may be useful to you in classifying if someone is wearing glasses or not.
Dataset: https://www.kaggle.com/jeffheaton/glasses-or-no-glasses/

Minimum expectations:

- Implement an end-to-end machine learning pipeline for the task given in the project
- Use three to four concepts from the course (like K-NN, MLP, CNN, Decision Tree, KMean clustering, regression)
- Performance evaluation of the entire pipeline and comparison of multiple concepts implemented (as part of the previous point)
- Three-four page single column (single spacing) brief report of your ideas, experiments, and results
- Codes with proper documentation
- Bonus points will be given for additional effort
- Clearly mention who did what in the project.

Deadline (FIRM): May 30, 2021: 11:55 PM IST