

Final Project Development Plan

COMSC 341-CV (Fall 2024)

PROJECT NAME	TEAM NAME	GROUP MEMBERS (NAME, EMAIL)
Facial Recognition through Emojis	Miriam & Anh	Miriam Xu (xu28m), Anh Pham (pham36a)

PROJECT OVERVIEW

PROJECT DESCRIPTION	<ol style="list-style-type: none">GOALS: Build off of program that generates emojis based off of facial expressions.EXPECTED DELIVERABLES: Program that outputs a score based on how accurate a facial expression is to an emoji. We can also, either instead of or in addition to, add more emojis that can be detected (there are only four in the source code), or make expressions detectable even when the face is at different angles.EVAL METRICS: How accurate are the scores? How well can the program detect the face? How consistent is the program?
WORKSHARE	We will both conduct our own initial research. We will both be active in communication. We have
IDENTIFIED CHALLENGES	<ol style="list-style-type: none">Difficulty distinguishing subtle emotions or overlapping expressionsLimited datasets leading to bias or inaccurate results
TENTATIVE SOLUTIONS	<ol style="list-style-type: none">Update model with user feedback
(OPTIONAL) PRELIMINARY RESULTS	

PROJECT COMPONENTS

INTERACTIVE COMPONENT	People will try to replicate an emoji given by the program through their facial expressions.
TECHNIQUES LEARNED IN CLASS	Interest points, feature matching
BEYOND THE CLASS MATERIALS	Facial expression recognition

RELEVANT RESOURCES

Work as a team to look for at least 5 relevant reading materials. You can find papers on Google Scholar, tutorial blog posts, online computer vision textbooks, or an opencv/tensorflow/pytorch library documentation, etc.

Resource Name	Type (paper, blog, tutorial video?)	Relevance How do you anticipate each resource to be helpful for your final project?	Resource URL
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INSERT TEXT	INSERT TEXT	INSERT TEXT	INSERT TEXT
Training Deep Networks for Facial Expression	Paper	This will help us better understand how to train models for facial expression recognition	https://paperswithcode.com/paper/training-deep-networks-for-facial-expression
Facial Emotion recognition	Blog/video	Good overview of the current field	https://learnopencv.com/facial-emotion-recognition/
Emotion Detection Model using CNN — a complete guide	Blog/tutorial video	Walks through emotion detection implementation at a high-level	https://medium.com/@skillcate/emotion-detection-model-using-cnn-a-complete-guide-831db1421fae
GoEmotions: A Dataset of Fine-Grained Emotions	Paper	Goes over emotion classification	https://paperswithcode.com/paper/goemotions-a-dataset-of-fine-grained-emotions
Tutorial : Facial Expression Classification Keras	Tutorial blog	Walks through emotion detection implementation at a low-level	https://kaggle.com/code/asishpatel26/tutorial-facial-expression-classification-keras

TENTATIVE TIME SCHEDULE

The proposed progress time schedule before the project due date. Please take into consideration the project milestones listed on the course calendar. You are encouraged to specify checkpoint types (W: for writing, C: for code development, and L: for learning new techniques or going over relevant tutorials)

ACTION ITEMS (CHECKPOINTS)	START	FINISH	PERSON (who's in charge)	TYPE (W, C, L)
Find a good code source	11/19	11/22	Anh	L
Facial feature extraction	11/19	11/24	Anh	C
Emotion Classification	11/19	11/24	Miriam	C
Implement scoring	11/24	11/30	Miriam & Anh	C

