**ECE Capstone program**

**Spring 2020**

**Project Abstract & Info**

Please provide the following information to be shared with on capstone information exchange platform:

**1. Project number**: S20-34

**2. Project title (as will appear on the poster)**: Artificial Emotion Recognition

**3. Team members**: Devvrat Patel, Andy Lee, Nathan Silva, Jahidul Islam, Shivani Sunil

**4. Adviser(s) name(s)**: Dr. Yeon-Jun Kim, Dr. Shahab Jalalvand, Dr. Hana Godrich

**5. Up to 5 keywords that will help to classify the project scope**:

Artificial Intelligence, Web, Human Emotions,

**6. Project abstract (up to 250 words) to be shared with judges**:

(General guidelines: The abstract should include: (a) A background review of the state of the art in the relevant field; (b) The problem addressed in the project; (c) Objective of the proposed projects; and (d) The adopted approach)

1. Some projects already exist in the emotion detection realm of machine learning such as real time emotion recognition through signals of speech and language.

Our goal is to improve upon the current models using emotion detections by creating easily accessible interfaces and systems to analyze a user’s state.

1. Automated customer feedback systems can be frustrating to users thus allowing the inefficient system of direct human interaction to predominate the customer service field.

Emotion sensitive systems are necessary in order to handle the larger volume of customers to meet the increasing demand.

By managing customer interaction based on emotion, a human-like flow of communication can be established to meet customer needs.

1. Our primary objective is to better understand and analyze user emotions to provide proper feedback and appropriate responses.

We will be detecting emotions in real time and processing the information from input via web interface and communication to ASR engine

1. Part 1- Web Interface, this will involve:
   * + Developing a method of capturing audio
     + Establishing a communication with ASR engine
     + Developing method to receive hypothesis from ASR and passing it to Machine Learning Algorithms
     + Displaying analyzed emotion as an output to the user

Part 2 - Machine Learning, this will involve:

* + - Collecting a variety of applicable data
    - Building models based on collected data that can be effectively analyzed to detect emotions
    - Testing models to ensure proper emotional response
    - Output to web interface