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: S20-68

2. Project title (as will appear on the poster):
Facial Recognition & Object Detection For Alzheimer’s & Memory Impaired

3. Team members:
Ludwig Randazzo, Avnish Patel, David Santiago, Ernest Chiu

4. Adviser(s) name(s):
Dr. Hana Godrich

5. Up to 5 keywords that will help to classify the project scope:
   1. Facial Recognition
   2. Object Detection
   3. Augmented Reality
   4. Memory Impaired

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)

The aim of our Capstone is to address memory related impairments. There are millions of people around the world that suffer from memory impairments such as: Alzheimer’s, dementia, strokes, natural aging, injury, etc. These conditions make daily life difficult for not just the patient, but their family members as well. The physical, mental and emotional burden on everyone involved is overwhelming. We are aiming to tackle this problem and try to restore some normalcy to these patients and their family’s lives through augmented reality, facial recognition and object detection. The original plan of action was to create a web app that users could utilize to enter family member pictures and personal information. This information would be ingested to a database, processed and sent to a Microsoft HoloLens Headset for the patient to view allowing them to access it right in front of them in real time. We’ve had to scale back the hardware portion of the project, unfortunately, due to constraints caused by the Covid-19 pandemic. Facial Recognition/Object Detection will still commence, but on a laptop for demo purposes. The remainder of the user experience such as uploading information and processing remains unchanged. The inspiration behind this project was Paul Baldasarre, the grandfather of a friend, who suffered a stroke.