Goal

- To create a user friendly Microsoft HoloLens application aimed towards those with prosopagnosia that assists in the identification of a person’s name and emotion.
- The app will allow a user to create a “contact list” of acquaintances that might need to be recognized in potential professional/social situations.
- The app will allow the user to input new contacts via a name and a single picture, which will then be used for face recognition.

Methodology

- In order to determine a person’s identity and emotion with a high level of accuracy, two pre-existing Microsoft APIs will be used to calculate these results.
  - The Microsoft ProjectOxford Face API is used to create a PersonGroup, which is a designated location that stores a user’s contacts. Method’s in the PersonGroup class are used to determine whether a person exists in the specified group. If they exist in the group, their identity is returned.
  - The Microsoft Azure CognitiveServices Face API is used to determine a person’s emotion. A request for information determines which information will be returned by the Cognitive Services Face API.

Motivations and Objectives

- Motivations
  - Prosopagnosia is a type of visual agnosia that is primarily characterized by the inability to recognize the identity of faces. It is also informally known as “face blindness”.[1]
  - Those who suffer from prosopagnosia often experience issues in daily life, such as losses in psychological security, communication, and personal independence.[2]
  - Prosopagnosia is relatively common, with research suggesting that approximately 2.5% of the population has some degree of developmental prosopagnosia.[1]
- Objectives
  - Build a straightforward and easy-to-use assistive application for those diagnosed with prosopagnosia.
  - Inspire further research into integration of AR in daily life.

Research Challenges

- HoloLens Compatibility
  - Determining and implementing the appropriate code and UI format that would allow for the application to run on a Microsoft HoloLens (UWP - Universal Windows Platform).
- Photo Storage/Access
  - Appropriately storing and accessing photos in order to train the Face API to allow for identity detection.
- Identity and Emotion Detection
  - Utilizing both the Microsoft Project Oxford Face API and Microsoft Azure Cognitive Services Face API for identity and emotion detection, respectively.

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References