# Capstone Project Proposal

## iPAD application to teach Emotional Recognition

### Background

One of the trait of Autism and related disorders is social dysfunction including the difficulty to recognize emotions through facial and non facial expressions.

Effective treatment has recently been demonstrated when rigorous, multimodal behavioral therapies are employed early in diagnosis, and continuously throughout development and beyond. Additionally, direct parental involvement is also associated with improvement in outcomes for Autistic children.

One of the challenges for parents and caregivers of autistic children is the necessity for frequent, extensive periods of therapy with trained clinicians on a daily basis. Offering parents access to similar or supportive therapies that can be run on their family iPAD or iPhone could minimize caregiver burden and improve outcomes.

### Statement of Work

Teaching autistic children to recognize and appropriately respond to emotional cues in human facial expressions is one of the core therapies employed. Numerous software packages offer this therapy for PCs, but few offer these same programs for ultramobile computers, like iPhone or iPAD, and those that do exist have very poor performance. We propose developing a robust facial emotional recognition training application with the following features:

* A comprehensive facial image library of human emotional states
* The ability to scan a facial picture of a given individual (like parent, teacher, sibling) with specific emotional states into the library
* The ability to record voice files that can be played with images or independently as needed
* A therapeutic game that prompts the patient to associate facial images with the appropriate emotion and/or proper response
* Pictorial/image and voice feedback for patients to encourage and acknowledge participation and accomplishment in the recognition task application
* A data management utility to monitor and report patients progress to parents and clinicians (as appropriate)

### Mentor Information

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