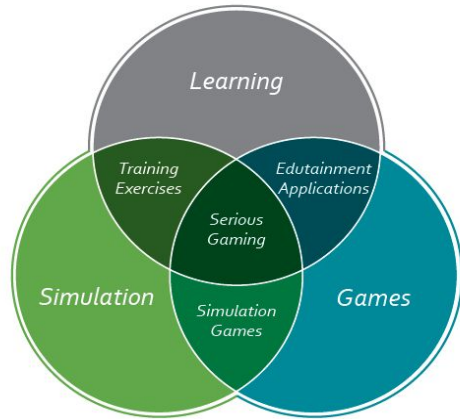# Free Skies

Autism Virtual Reality Project

Team Members: Gavin Smith, Alanah Cottingham, Jiaqi Yang

Background

- What is autism?
- How can Computer Sciences take part in the treatment of autism?
- What is our application?

Faculty Sponsor and Clients

- Faculty Sponsor: Dr. Lucas Stephane
- Client: Dr. Dana Gadaire
- Client: The Scott Center for Autism Treatment

Goal and Motivation

- The goal is to create an application to assist the therapist (our client) on providing an easy, entertaining, and efficient method to aid autistic kids in facial expression recognition.
- Our motivation is to assist with the progression of autistic treatment by using a gaming platform.

Features - Patient

- **Keeping Patients Engaged** - Based on the treatment needed by the autistic patient the levels will include a friendly character to help guide the patients through tasks and familiar and comforting environments.
- **Positive Reinforcement** - A consistent character will appear to provide encouragement for the patients. For example, if a patient is struggling with a situation the character can say "You can do it keep trying." This way the patient does not become discouraged.
- **Treatment Plan Access** - The patient will be able to access the treatment plan their staff member assigned to them in a gamified form.

Features - Therapist

Filtering would important for Staff so it is equally important that they have options

- Individual Profile
- Comparing Profile Filtering: How is Gavin doing compared to Alanah
- Progress Filtering
- Feedback from the patient: How much they are enjoying the process
- Lowest Mean test scores for different categorizes: Why is everyone scoring low in facial recognition dealing with sadness is it too hard
- Highest mean test scores: Is this measurement method too easy

Technical Challenges

- Limited experience in game engine
- Database management
- Difficulty with user-driven system

Milestone 1 (Sep 30)

- Have a meeting with both our faculty sponsor and the Scott center to create full requirements documents outlining exactly how each aspect of the platform is supposed to work.
- Have a development platform be chosen and have a small simple animation environment be setup in unity where the user can look around
- Have an Entity relationship diagram created to have a physical layout for the database
- Select all the tools needed for animation and ensure that it is compatible with the game's development platform
- Create a test plan for testing all aspects of each level as it associates with user interactions.
- Create a design document with faculty sponsor.

Milestone 2 (Oct 28)

- Create and test the pushing and pulling to a database and implementing the form generating feature.
- Create and implement individualized accounts that adjust the experience for each user. Example of this being name display, level of Avatar facial expression exaggeration
- Create and test avatars in-game development environment
- Outline requirements for the Avatars and possibly have a focus group with the Scott centers patients

Milestone 3 (Nov 25)

- Create a Functional level and be able to test the data collection aspect and Reward system.
- Host a test run with the Scott Center and revisit the requirements document, making changes where necessary
- Create and test filter options for data on each patient's information, as requested by the therapist.

Task Matrix

Task	Gavin	Alanah	Jiaqi
Requirements Document with Scott Center for each aspect	Focus and write the Therapist and Main Database aspect of the document	Focus and write the Rewards System Avatars aspect of the document	Focus and write the Child user aspect of the document
Choose Development platform	Unity research	3d vista research	Copper cube research
Developing a test demo	Working with the creation of the camera for the user looking around the area	Creating and Importing test environment plugin	Importing and testing sprite/avatar plugin
Database ER diagram	Design	Review and Adjust	Review and Adjust

Task Matrix

Task	Gavin	Alanah	Jiaqi
Create a Design Document	Write 40 percent of the design document	Write 20 percent of the design document and review for any adjustment	Write 40 percent of the design document
Deciding on Animation Tools	Look into photoshop and other adobe products offered by adobe	Talk to Martin Gallagher an expert in the field on other alternatives	Research any other animation tool not mentioned
Creating a Test Plan	Responsible for 20 percent write up and review and adjustment	Responsible for Writing 40 percent of the test plan	Responsible for Writing 40 percent of the test plan

Contact

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Question?

Thank You