VR Documentary Proposal

**Group Members:**
Ashwini Chauhan, William Carr, Sean Johnston, Sang Lee, Joel Georges, Yana VandeSande

**Main Objective:**
Our project will consist of a virtual reality environment combined with eye tracking equipment to document and inform users on how certain circumstances can cause specific eye-movements. We intend to make a documentary with examples of how eyes react to specific stimuli and provide users with condensed information and science behind the research. In the documentary, we present multiple scenes each with the goal of provoking particular types of eye behavior. This is accomplished by presenting scenes with specific visual and auditory stimuli, with the goal of eliciting predefined and documented behavior in response to the stimuli.

**Implementation:**
We will be using the Unity 3D game engine to design and create various scenes in a 3D virtual environment. The environment/scenery will interface with the Fove eye tracking system. The combination of VR with eye tracking makes possible to gauge users’ visual behavior in response to visual and auditory stimuli. From this, we can gauge the success of our scenery in testing and use the results to improve effectiveness.

We will use the psychology of colors to achieve the different moods of the environment and achieve the different emotions we expect from the user. For example, we will integrate the color blue to give a soothing and calm environment. The color red will be used to give a feeling of being in danger or to get the user’s attention. The color yellow will be used to emit a feeling of happiness producing a happy environment. The color black will be used to give a feeling of mysteriousness or fear.
**Example Scenery:**

One example of a scene is a man standing in the middle of a white room while explaining how if something out of the ordinary pops up, the eyes immediately gravitate towards the unexpected object. As he is explaining this science and physiology behind the connection between the eyes and the brain, a large red circle pops up on the top right of the screen. As expected the user’s eyes move towards the red circle.

In our project, we will be creating environments similar to the ones in “The Matrix”. One of the research questions at the end will ask the user if they have seen the movie. We will analyze the differences between reactions between people who have seen the film and those who have not.

Another example of a scene is similar to the movie “The Matrix”. In one of the beginning scenes, Morpheus is still standing in a blank room explaining to Neo the matrix and the training environment they created. Instead, we will be discussing the eye movements and physiology behind them. Similar to the movie, our project will unexpectedly test these eye movements when surprised, under stress, and etc. all during the explanation. In continuation to the earlier example, if the user gets distracted, as soon as the user’s eyes re-focus on the narrator speaking, the environment will change to either a calm scene or a scene where the user feels endangered.

**Conclusion:**

The ideal goal of the project is to have a working detailed interactive VR environment as a platform for eye-tracking experiments. Realistically, our base goal is to get the interactive VR environment built and working. We will use Unity to code our VR project and integrate with the Fove VR and eye-tracking platform. A major part of the VR environment will be to implement eye-tracking as the user’s means for decision-making.

Our main objectives of the project are the following:
• To gain experience working with other programmers as a team
• To become proficient with Unity and virtual reality design
• To gain experience integrating multiple systems together
• To prudently set expectations as a team meet deadlines