**Module 5: Critical Thinking Assignment**

Thomas Keefe

CSU Global

CSC405

Professor Marquez

07.06.2024

**Viewing Functions**

Viewing functions in computer graphics are essential for rendering scenes from various perspectives and ensuring that objects are displayed correctly in a 3D space. These functions include transformations such as translation, scaling, and rotation, as well as projection transformations that map 3D coordinates to 2D screen coordinates. One of the fundamental viewing functions is the Model-View Transformation, which combines the model and view matrices to position and orient objects in the scene relative to the camera. This transformation is crucial for creating the illusion of depth and positioning objects correctly in the virtual space.

Another important set of functions involves Projection Transformations, which determine how the 3D scene is projected onto a 2D viewport. There are two main types of projections: orthographic and perspective. Orthographic Projection preserves the relative dimensions of objects, making it useful for technical and engineering drawings where accurate measurements are needed. In contrast, Perspective Projection simulates the way the human eye perceives the world, where objects appear smaller as they get further away from the viewer, adding a realistic sense of depth to the scene. These projection transformations are fundamental for creating realistic and visually appealing 3D graphics.