Device Overview

The Smart Mirror system consists of a depth camera, a 3D display, and video processing software that provides a three-dimensional representation of the user's body. We use a Kinect sensor as a depth camera to provide 3D information of the subject. The monitor we use allows the user to see their model in passive 3D. In our demo, we allow the user to use a touch screen device to navigate the user interface from afar.

The Smart Mirror software is powered by Kinect Fusion. This software uses depth and color information from the Kinect sensor and creates a 3D model of the user based on this information.

The Smart Mirror will be useful for clothing and medical fields, but can be adapted to fit other applications that require a rapid, non-intrusive method to scan 3D models.

Business Opportunities

Clothing Industry

The combination of 3D model scanning and 3D models of clothing will allow the Smart Mirror to be used as a virtual dressing room. Companies can have a database of virtual clothing for customers to try either in a department store or even online at their own homes. We seek to improve current virtual dressing room technologies by allowing users to view a full 3D model of their figure instead of a simple 2D representation.

Medical Field

Surgeons may be able to use the Smart Mirror to demonstrate outcomes of a reconstructive plastic surgery. The Smart Mirror can save multiple meshes, which can allow users to compare various potential surgery results.

Potential to Expand to Other Fields

Advantages of the Smart Mirror technology lie in rapid, non-intrusive data capture, which allow the Smart Mirror to be easily applied to other fields that require building 3D models, such as animation and 3D printing.