

**MASTER'S PROJECT (FALL 2016)****TOPIC:** *Bringing a Rich User Experience for Online Shopping Using Virtual Reality***PRESENTOR:** Vishnu Vardhan Kumar Pallati**ADVISOR:** Dr. Haiping Xu**DATE & TIME:** Wednesday, December 7, 2016, 10:00AM**LOCATION:** Dion 305**COMMITTEE MEMBERS:** Dr. Ramprasad Bala and Dr. David Koop**ABSTRACT**

Virtual reality (VR) is an emerging technology with tremendous potential to provide immersed and rich user experience. As an interesting application, online shopping using VR technology sounds promising and may become popular in the near future. For over a decade, online shopping has been confined to a 2D screen with images, text-based information and reviews of products. In spite of being convenient, it has often been criticized for a lack of rich user experience. In this project, we adopt the VR technology for online shopping, where a user can play a game changing role in a virtual online shopping mall. The user can immerse him/her into the virtual shopping mall with holographic reality and a 360-degree real-time shopping experience. With rich 3D models of the shopping mall and products with real-world textures, the user can walk down the aisles to browse the products and purchase them in a similar way as in real-world shopping experience. This project uses Google cardboard technology that requires a VR headset, a smartphone and a Bluetooth joystick for user input. The application consists of three major modules, namely user interface module, product module, and shopping cart module, which are loosely coupled. The user has a first-person VR view and the head moments are sensed using accelerometer on the smartphone to mimic the moments in the VR world. In addition, the user can use the joystick to freely roam in the mall, interact with the products for properties such as price, product details and quantities, and select products and add them into a shopping cart. We developed the application using Unity3D game engine, C#, and the .NET framework. The demonstration of the application shows the potential usage of VR technology in online shopping for a much richer user experience.