Building Scenes from Real World Environments with the Kinect

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Abstract

The end goal of this project is build a scene with a XBox Kinect from a real world environment. This is useful in many aspects of 3d graphics and consumer Virtual Reality (VR). In 3D graphics, this can be used to build scenes for video games from sets and create realistic environments for users to navigate. In consumer VR, this can be used in real estate for creating free roaming virtual tours.

Over the course of this project, I will be implementing algorithms found with the KinectFusion [[@newcombe_kinectfusion:_2011; @izadi_kinectfusion:_2011]] project based the PCL open source implemention [[@_documentation_pcl]], as well as the algothims from Kintinuous papers. I will also create a viewer that can work with the display wall and head mounted displays in the Immersive Visualization Studio lab.