

Newport News Shipbuilding – Augmented Reality

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The purpose of this project is to introduce, exhibit, and explore the recent advances made in augmented reality technology. The majority of our research explored the proficiencies and deficiencies of target types offered by the Vuforia SDK. Vuforia offers an array of targeting options, the most noticeable being Image Targeting, Model Targeting, and Ground Plane (Vuforia's version of markerless based targeting). We found that selecting the correct type of targeting is imperative because each has its own strengths and weaknesses. Care should be taken when deciding which form of targeting should be used, as well as knowing the necessary requirements needed to make each form of targeting both efficient and accurate (e.g. lighting of the environment, image resolution, picture detail). We believed that by understanding the benefits of Vuforia's different target types that we could recommend solutions to our project sponsor; Our sponsor had been utilizing image targeting, but had not yet tested model targeting or ground plane extensively. By creating small projects in each targeting domain, we hoped to gain a greater understanding for ourselves and our sponsor.

The goal of our demonstration is to display to our audience the capabilities of Augmented Reality. We hope that our audience is able to comprehend the importance of selecting the right type of targeting depending on set requirements after observing our demonstration. We also seek to highlight key differences between Vuforia AR, Google ARCore, and Apple ARKit.

Keywords: Augmented Reality, AR, Vuforia, Targeting