Augmented Reality Grenade Trajectory Fall 2017

Overview

NVESD requested a prototype as a proof of concept of feasibility of using an augmented reality to predict the trajectory motion of a launched grenade from M320 grenade launcher. Upon the request, we used Microsoft HoloLens as the eyepiece to project the trajectory of the projectile motion of the grenade. In order to predict the trajectory of the motion, we used Arduino Uno as the gyroscope to measure the angle of the barrel.

Objectives

The team’s objective is to create a prototype of an augmented reality grenade trajectory as a proof of concept to show that this solution can be used as an aid to the soldiers in combat.

Approach

- Customer needs were obtained from a meeting and frequent calls and emails.
- Concept generation was done based on the request and we decided to use HoloLens as our platform for this project.
- Different software was reviewed in order to choose the best platform to create the app for the HoloLens.
- By using Unity3D, we created an app on the HoloLens that projects a predicted trajectory to the viewer.
- The HoloLens is connected wirelessly to the Arduino via wifi.

Outcomes

- Create a prototype device and software that will allow the company to validate viability of the idea.
- Demonstrates the feasibility of a head worn augmented reality grenade trajectory display.
- This prototype will be pitched as a proof of concept to project leads with the intent to include the concept in their “in house” Augmented Reality devices.