

Rifle Arcade Game

Team Members:

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For our project, we will be creating a shooting arcade game using the FPGA. We will have a modified toy rifle which will feature a button as a trigger and a specific colored tip which we will be able to track via image analysis. Using a gyro sensor and the analysis of the image, we will have an idea about where the rifle is pointed and display a target on the screen corresponding to that point. Based on where the bullet “hits”, we will produce sounds; “bullseye”, “miss”, etc. We will also implement several different levels for the game that will be broken up into degrees of difficulty - “Beginner”, “Intermediate”, “Expert”.

- Basic Features
 - Rifle
 - Gyroscope for detecting angular position
 - Button for detecting “shot fired”
 - FPGA
 - Some sort of optical sensor/image processing for detecting the Rifle tip
 - Memory to store the images to be shown on screen
 - Graphics
 - Display that shows target and sight of rifle so player can see where they are aiming
 - Showing a “hit” on the display