Hi, welcome to my 112 term project, CV Shooter. CV Shooter is a top-down space-shooter game controlled by color detection. It uses pygame as the base game and opencv as the control scheme. I have a tutorial page that teaches new players how to control. Two control schemes are supported, arrow keys and red-color detection can be used to move the player ship.

The main game has the player play through four different levels, with 1 mini boss and 1 final boss. The player has access to bombs and repair kits that will drop from enemies. An interesting mechanic for the game is that the game calculates the player’s performance through some algorithm, and the enemies will adjust their attack rate accordingly. The healing from repair kits also adjust based on this performance. This is to provide a more enjoyable experience for both inexperienced player and those that want more challenge. The final boss however, will not adjust its attack rate due to the special mechanic of laser beam attacks.

An additional mode called “challenge” is also available for the players. In this mode, the boss is an AI that dodges incoming player bullets. The player’s objective is to try to survive for as long as possible, while trying to hit the boss. If the player’s bullet makes the boss move, they get points based on how much the boss had to move. The smart AI boss will shoot a splitting bullet that splits at the last second towards a predicted player dodge direction. This prediction is based on previous player dodge positions relative to the initial bullet. The AI boss also shoots a homing bullet that follows the player for a while before disappearing. The interval between the boss’s shots gradually increase until the game becomes impossible.