

Laser Shot: Video-based Alternative to Arcade Light Guns

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Project description:

Laser Shot is an improvement of the arcade light gun system often used in shooting arcade games such as Duck Hunt. In Duck Hunt, a light-sensor gun is used to estimate the aiming point on a CRT monitor. However, such a method is incompatible with LCD screens. An alternative approach is to use a laser and video camera system to calculate where the gun is pointed. A laser is first mounted on the gun to project a bright red dot on to the display screen. The proposed system will use a video camera to capture an image of the screen with the projected dot. The image will then be processed to determine the location of the laser point on the screen. The system will be able to accommodate various camera distances and angles through a calibration process. To demonstrate the functionality of the laser-based aiming system, a modified version of Duck Hunt will be implemented. Ducks will be used as targets for the laser-based gun, and additional features such as sound effects and game modes will be implemented if time allows.