One Shot

Abstract

Our project revolves around the development of a Dart Shooter Robot capable of operating in two distinct modes: Manual and Autonomous. While the Manual mode provides users with direct control through a mobile application, the Autonomous mode leverages camera technology and advanced sensors for precise target recognition and shooting capabilities.
In the Autonomous mode, the robot utilizes its integrated camera and sensors to autonomously identify and track targets, providing a hands-free dart shooting experience. This mode eliminates the need for manual target acquisition and enhances the user's dart-shooting accuracy.
The Manual mode, accessible through a user-friendly mobile application, remains unchanged, allowing users to take control of the robot, aims and shoot at targets using the camera's real-time vision feedback.
While previous projects may have integrated distance sensors for target detection, our project's distinctiveness lies in the incorporation of advanced camera-based visual recognition technology, eliminating the need for additional sensors and adding a layer of precision to the target acquisition process.
Our focus is on creating a versatile and engaging dart shooter robot that seamlessly transitions between manual and autonomous modes. This project amalgamates our passion for hardware innovation with the excitement of gaming, offering a unique and captivating experience for users. Our research will involve selecting suitable hardware components and optimizing the visual recognition system to ensure exceptional performance in both manual and autonomous modes, making our Dart Shooter Robot stand out in its category.