

ABSTRACT

In tennis, training is required to improve tennis skills. When practicing independently, you need the help of a ball throwing machine which is useful for giving the ball when doing hitting exercises and practicing receiving the ball. In this study, the tennis ball throwing machine was designed that is capable of adjusting the direction, speed, and rotation of the ball thrown. This machine is also able to adjust the direction of the throw based on the player's position using object tracking. Direction and speed settings on this machine can be done through a web browser-based application so that it can be accessed via a device or computer using WiFi network. This tennis ball throwing machine is capable of throwing the ball at a vertical angle of up to 25° and the speed of a tennis ball shot can exceed 20m/s. Then with the YOLOV8 algorithm, the confidence generated when tracking objects is 78%.

Keywords: Tennis, Topspin, Backspin, Throwing Machine, Brushless Motor, Object Tracking, Computer Vision, Brushed Motor, Ball Trajectory.