

We're thrilled to announce the successful completion of our first in-house project - an autonomous soccer robot referee. Our autonomous soccer referee design, helps human referee make decisions when calling matches. Each year, Mechatronic System Design (MSD) trainees at the TU/e participate in this project and this year's contribution includes a successfully designed algorithm for checking set pieces, such as corner kicks, free kicks, and penalty kicks, where the game is temporarily stopped to allow players to set up in a specific formation or position. Our autonomous referee is able to detect and penalize violations regarding the teams' positioning. The specific features and capabilities of the autonomous referee for judging the corner kick set piece includes:

- Recognizing the human referee gives a “corner kick” signal.
- Positioning the robot of the attacking team at the spot of the player taking the kick.
- Monitoring the position of all players of team taking the corner kick so that they stay outside a circle with a radius of 2m around the ball until the ball is in play.
- Monitoring the position of all players of the opposing team so that they stay outside a circle with a radius of 3m around the ball until the ball is in play.

We're proud to share our final simulation video with you and invite you to check out our GitHub page for more information. Thanks for your continued support!

GitHub link:

[ElhamHonarvar/Auto-Referee:\(github.com\)](https://github.com/ElhamHonarvar/Auto-Referee)