

Adam Terwilliger

John Tunisi

February 9, 2016

CIS 365 – Artificial Intelligence

Project 1

Results

Results for 500 rounds

Rank	Robot Name	Total Score	Survival	Surv Bonus	Bullet Dmg	Bullet Bonus	Ram Dmg * 2	Ram Bonus	1sts	2nds	3rds
1st	sample.RoboJo...	89891 (96%)	25000	5000	49876	9979	36	0	500	0	0
2nd	sample.Corners	3348 (4%)	0	0	3328	0	20	0	0	500	0

Save OK

As we note, in 500 rounds our bot, RoboJohn, wins 500/500, 100% of the matches versus sample.Corners. We can see that we dominate the Survival and Bullet categories, only encountering minor Bullet damage and miniscule ram damage.

Approach

There we a handful of distinct features to our approach that allowed us to dominate Corners: centering, tracking, shooting, and strafing.

Centering – We developed a movement method that generates bearings from our robot to the center of the field and moves there.

Tracking – Once we arrived in the center of the field, we use a radar method to rotate until we have found Corners which triggered an OnScannedRobotEvent adapted from sample bot TrackFire.

Shooting – By acquiring Corners' velocity, we can understand when Corners has reached its corner and only when it has reached its corner (velocity ≈ 0), do we start shooting the largest bullets possible, as we know Corners won't move from this corner.

Strafing – We line up orthogonally (90 degree angle) to Corners and every couple of ticks of the game, we change move significantly in the other direction. This allows for us to avoid the majority of Corners' bullet fires.

Credits

In addition to working off the sample robot, TrackFire, we utilized the Robocode wiki, <http://robowiki.net/>, to better understand bearings and game strategies and a Robocode tutorial, <http://mark.random-article.com/weber/java/robocode/>, to better understand movement and strafing.