

JeongKeun (Jake) Shin

15-694 Lab3 Results.

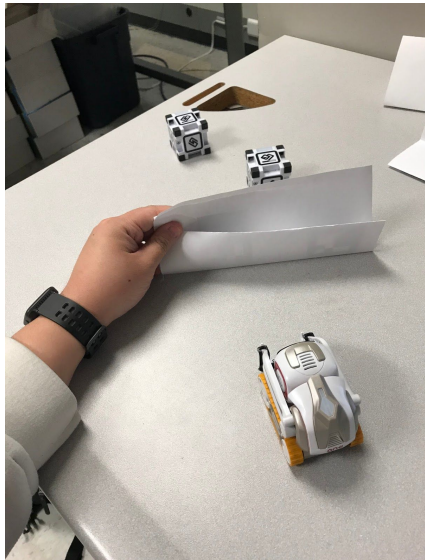
The code you wrote to determine the distance R, and the value you came up with. => Lab3Code.fsm

For this assignment, which was in-class Lab3 assignment, I worked with Jeffery Parker.

Result of distance R: -19.6429846

For the rest of works (programming problems), I worked alone.

First Programming Assignment: findClosestCube.fsm



Initial Setting



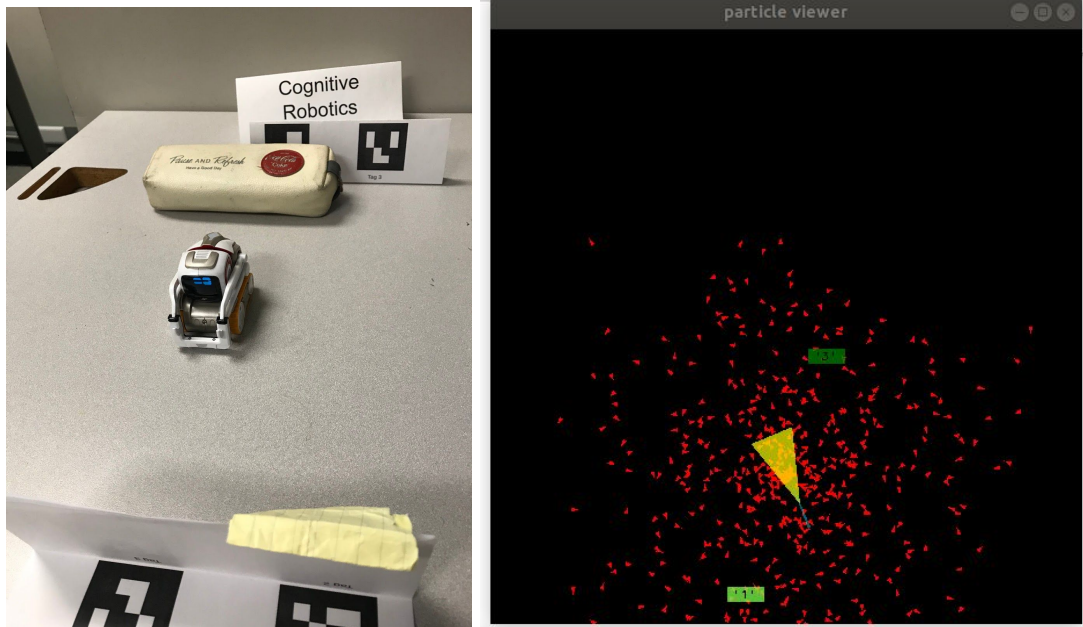
After Cozmo sees two cubes, it turns its face (direction) to the closer cube



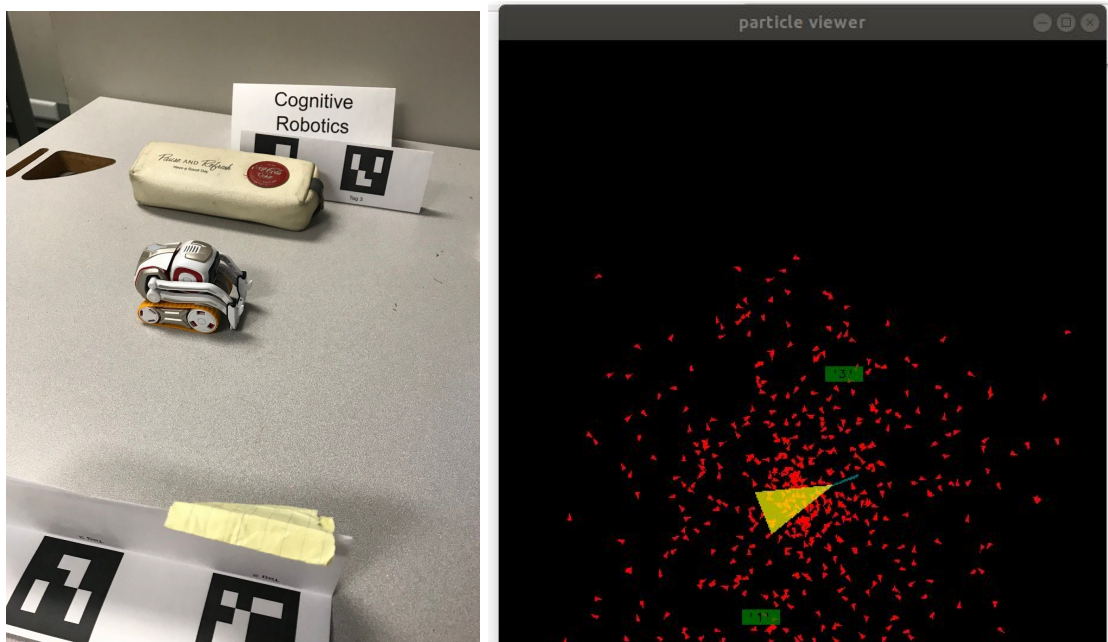
After making the farther cube closer than the other cube, the Cozmo turns its face (direction) to the closer cube again.

Second Programming Assignment: particle_localize.fsm

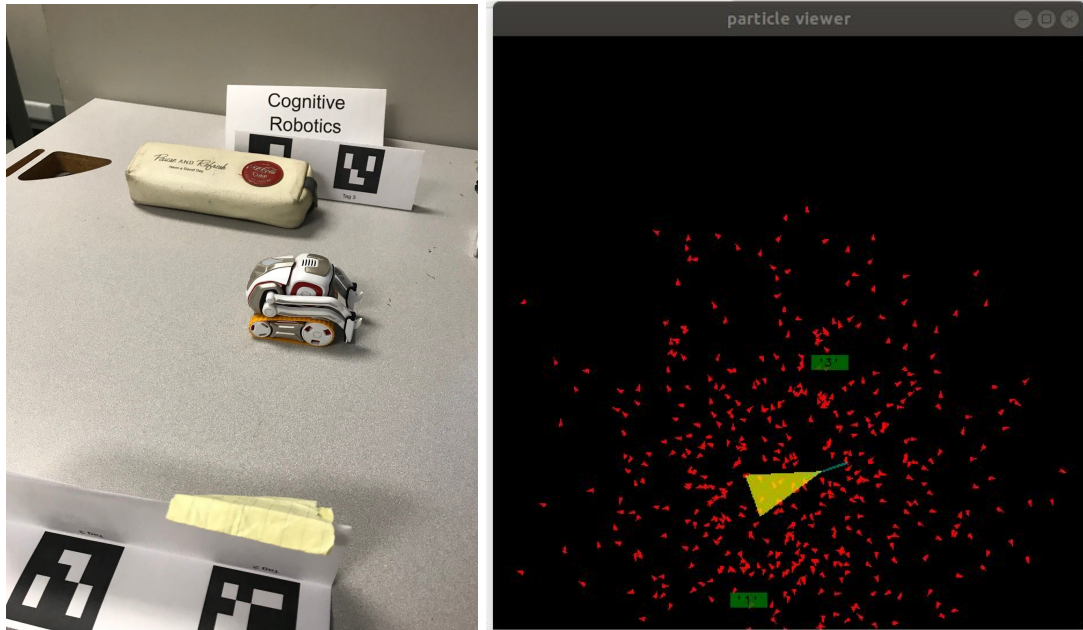
Among four Aruco Landmarks, I only used Aruco-1 and Aruco-3 landmark



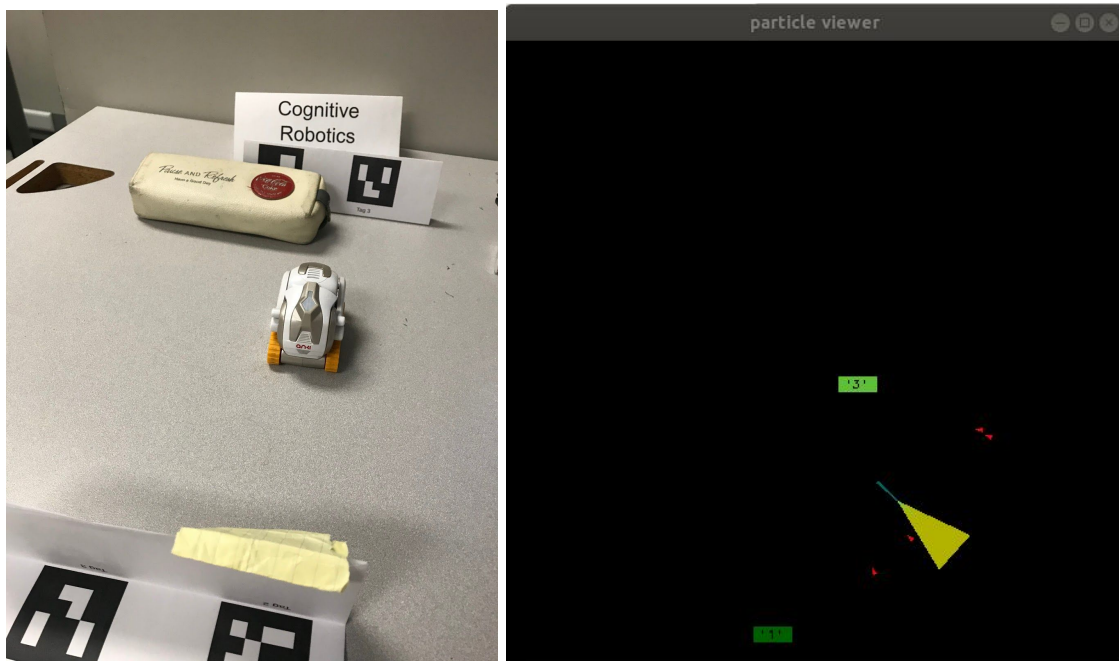
Initial Setting: Hide unused landmarks (Aruco-2 and Aruco-0) Cozmo is initially looking at Aruco-1 landmark. Aruco-3 Landmark is located in the northeastern direction from Cozmo.



After Turning 90 degree



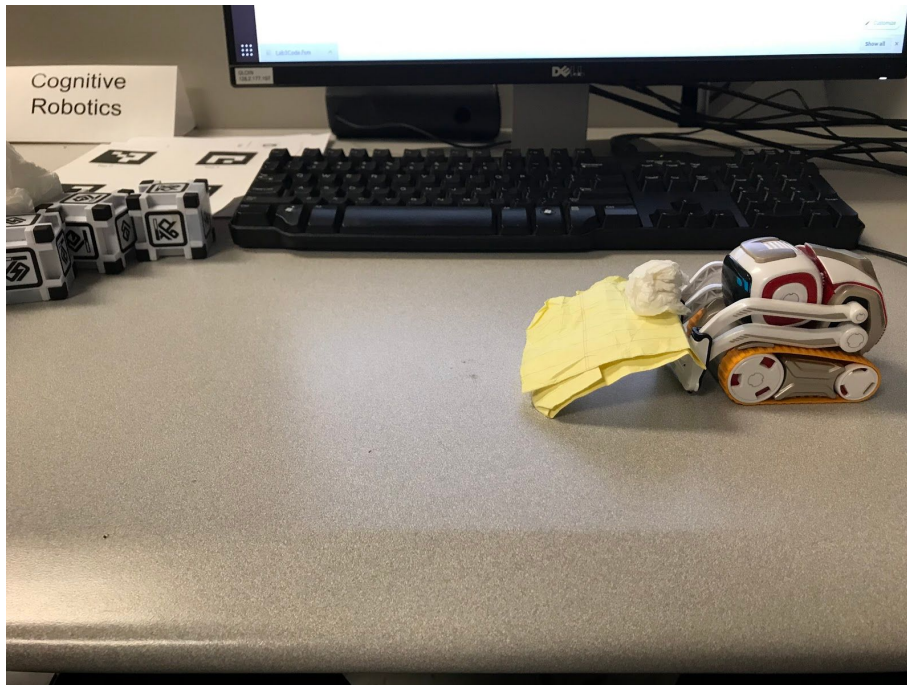
After some travelling (Forward(100).now())



After Turn(90), then recognizing Aruco-3

In summary, the particles are all over the area until the Cozmo recognized the Aruco-3 after turning 90 degrees at last. After the Cozmo sees Aruco-3, almost all particles are concentrated near the Cozmo's location, then Cozmo can roughly figure out its own location. However, the final location result is not very accurate.

Third Programming Assignment: Toss.fsm



Initial Setting (Before the toss)



After Toss

With some setting, Cozmo can toss a ball by using the inheritance of MoveLift node. After several tries with a ball made of tissue and a frame made of yellow-colored paper, my best tossing result is around 9 inches forward. From my trials, the direction of the tossing is highly dependent on the design of the frame rather than the speed of lift. For example, when I directly put a ball to cozmo with no frame, Cozmo tends

to toss the ball backward. After using a frame, if I design the frame slipping downward toward the right side, Cozmo tends to toss the ball to the right side. If I design the frame slipping downward toward the left side, Cozmo tends to toss the ball to the left side. Also, as I increase the value of the *speed* variable, Cozmo tends to toss the ball farther.