Robot meeting October 20th, 2022

-Talking about robot hardware (motor, relation between current and acceleration)

Possible solution: Use a correction loop that ensures the resulting acceleration is actually the expected one.

-Need to do some recognition to see if our current parameters work well. We have sensors and motors, but none is perfect. We could put gaussian noise in the simulation to take into account real life error.

-On the topic of the reward for the RL (reinforcement learning) algorithm, we want that making a goal is the reward. An idea is that the closer the ball is to the goal, the higher the reward is, such that you may have “infinite” reward at the coordinates of the goal of the opposite side.

When there is a goal, an “episode” is over and we re-start a game.

Reward = -

Where =time step

Note: The current update (time steps) for robots is about 1000 per second.

Glen: We should brainstorm and look at other ways of creating reward systems.

Brainstorm:

-You get rewards for every second that you are winning, and you are penalized for every second that you are losing.

-You get rewards if the ball is closer to an ally player and a penalty when it is closer to an enemy player

-There is a meeting tomorrow (friday 21st in the evening, 7pm) to the discuss electronics.

Soft assignment of roles:

Hardware leaders: Karim, Kasem

Software leaders: Raz, Juan