

NAO Autonomous Vehicle Operation

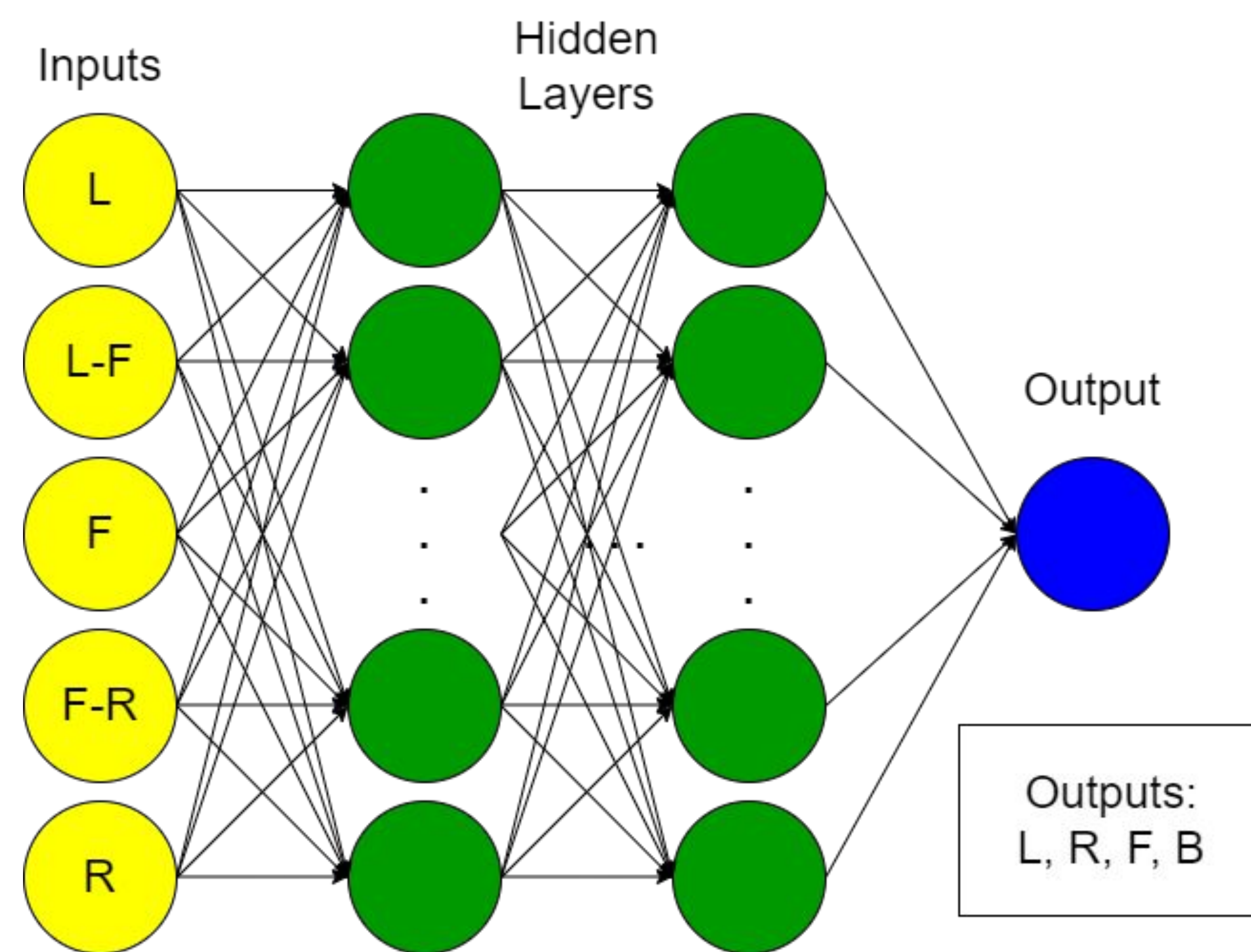
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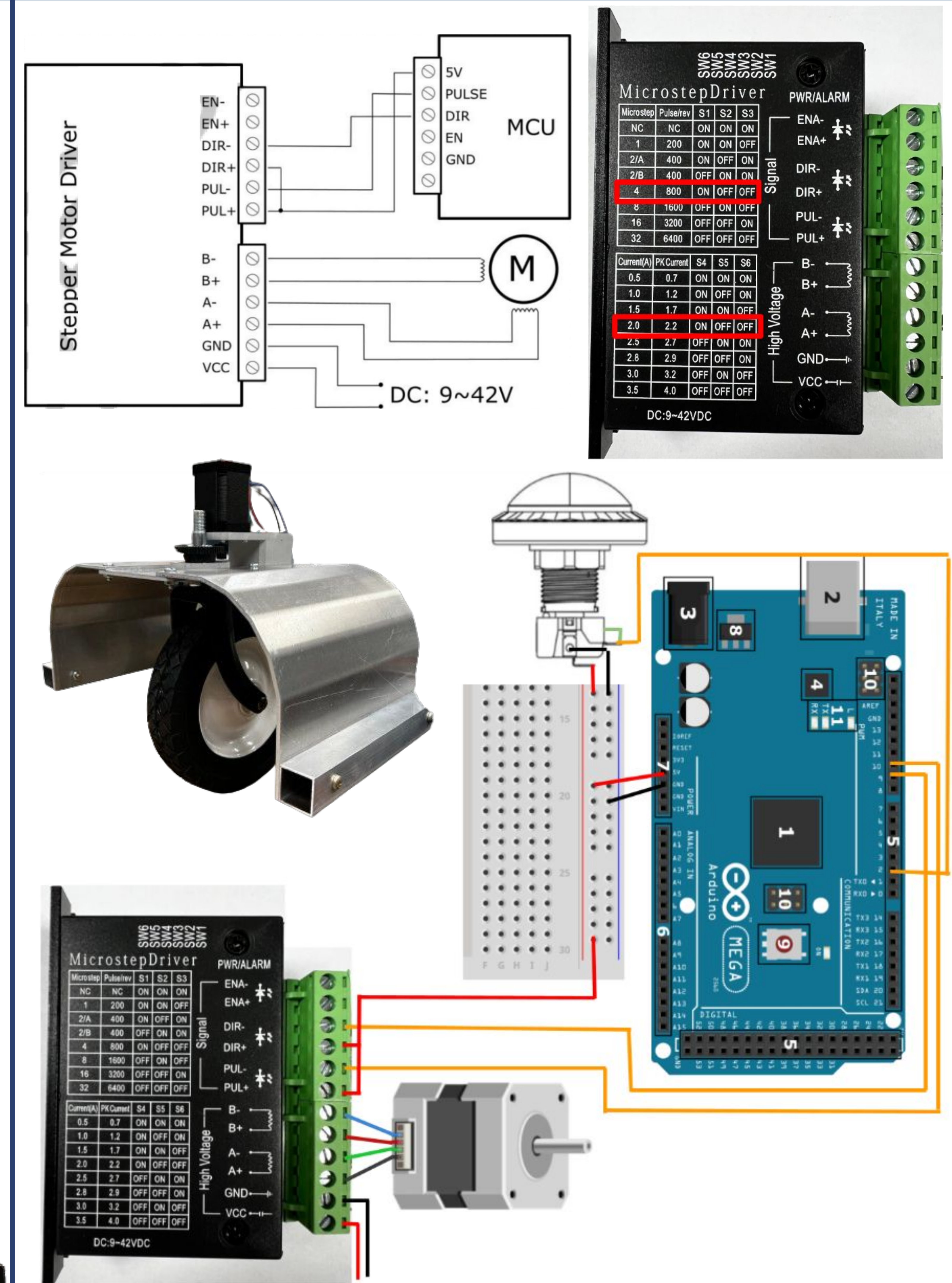
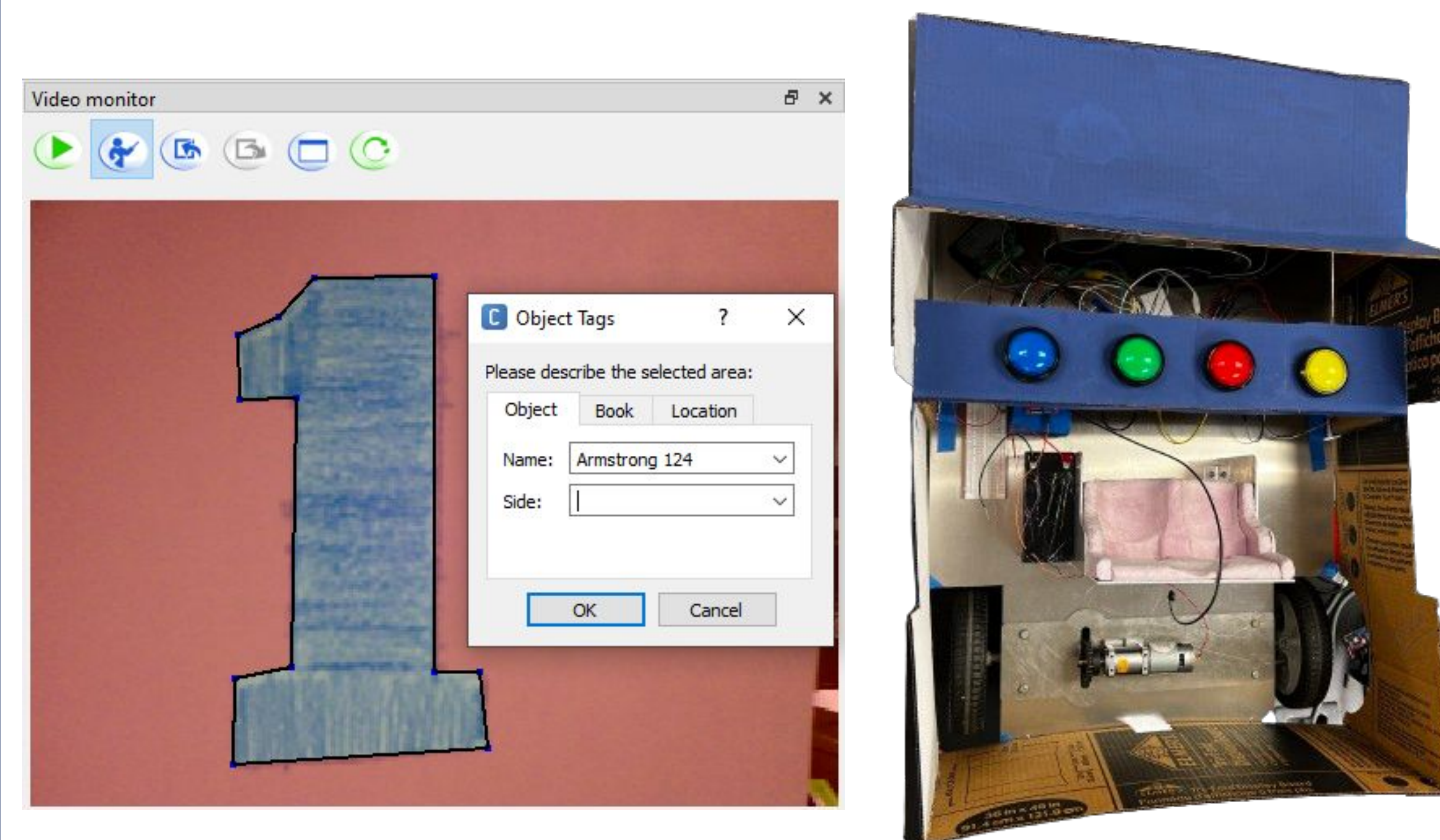
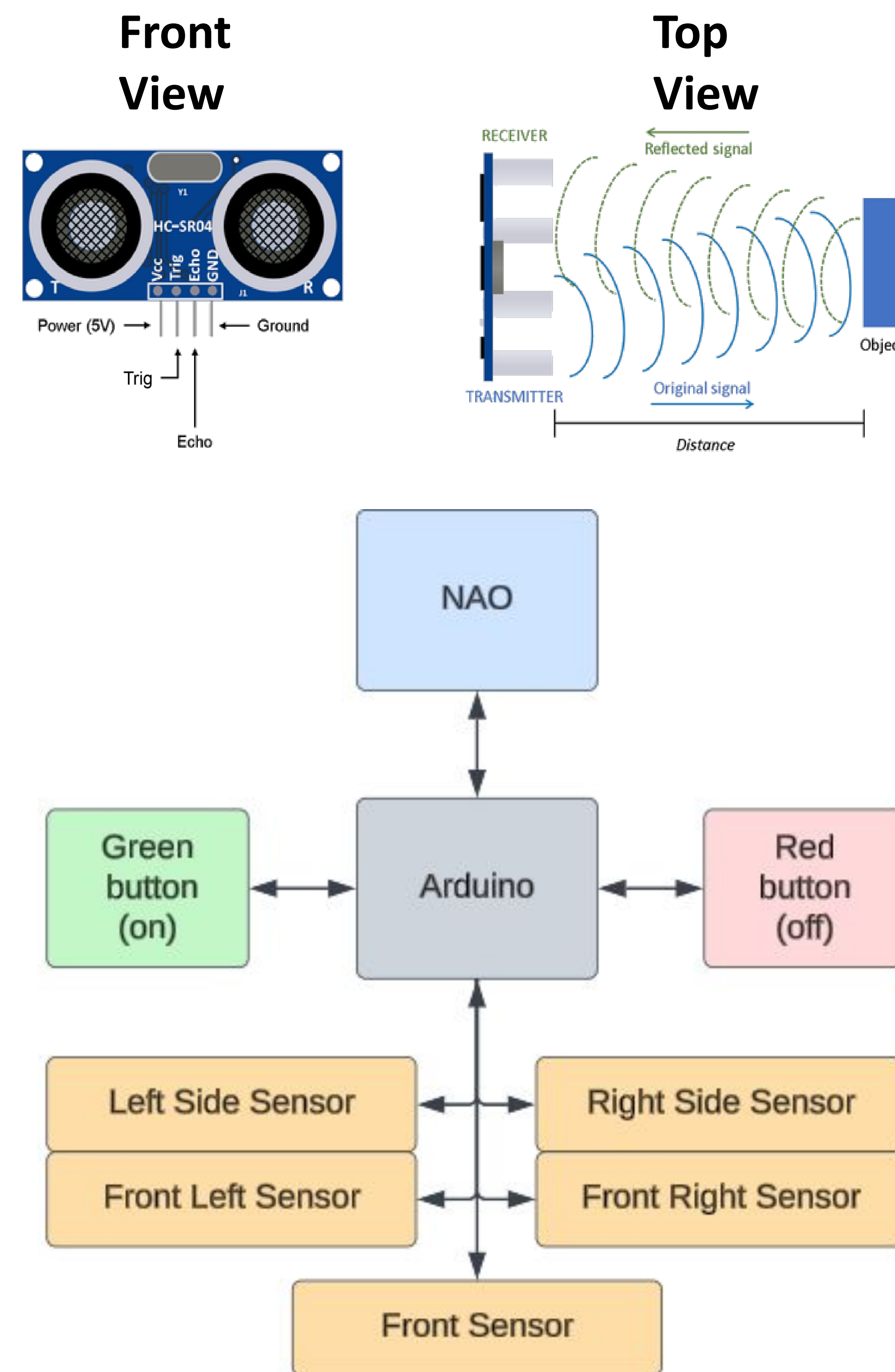
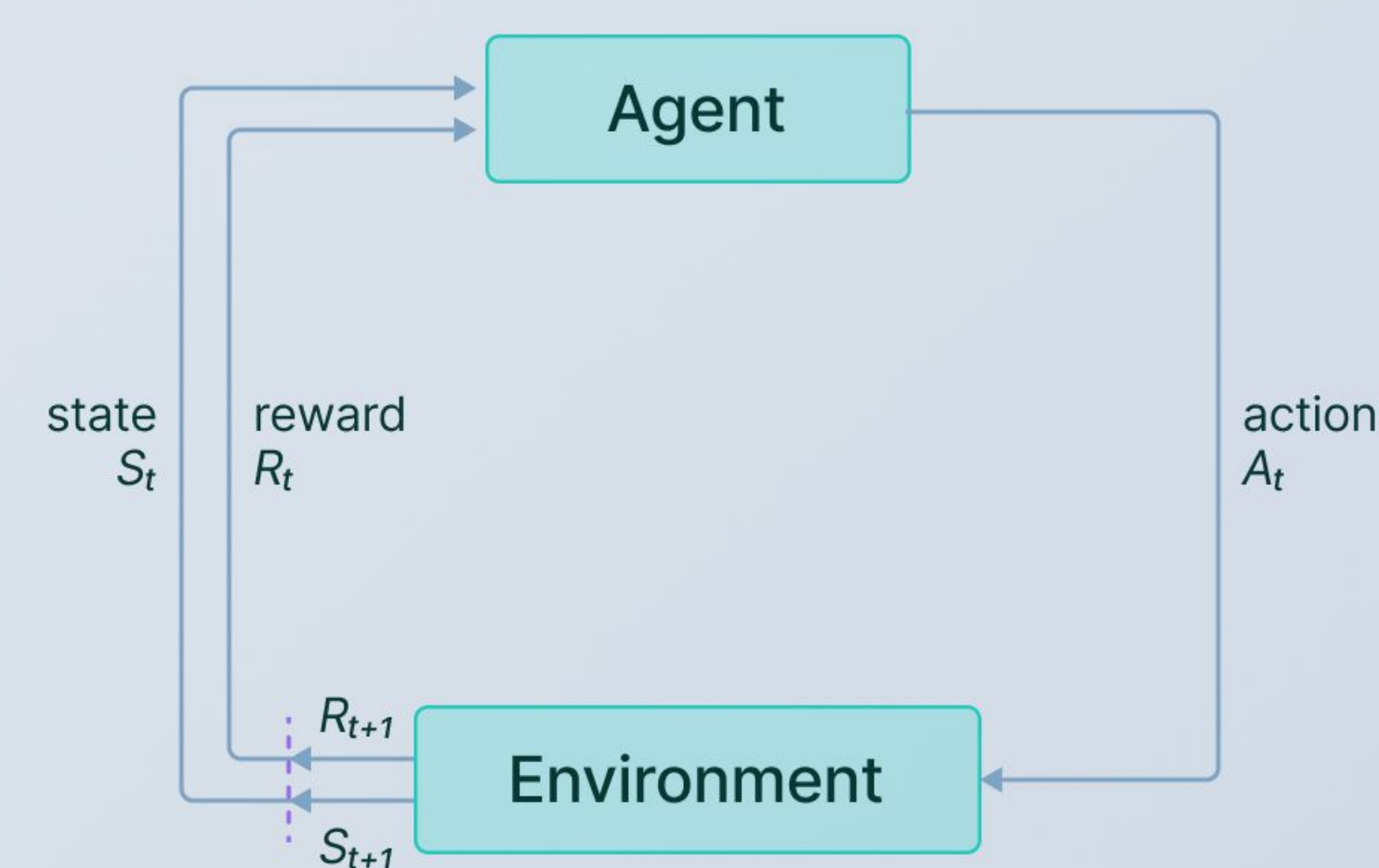
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Objective

- Improving NAO car project from 2016
- NAO car can autonomously navigate Armstrong Hall while dynamically avoiding obstacles
- Target areas are car steering/handling and migrating from algorithmic navigation to neural network navigation



Reinforcement Learning cycle



Conclusion + Future Work

In the future, we plan to upgrade the electronic systems. The microcontroller will be swapped for a raspberry pi and the ultrasonic sensors will be switched to lidar sensors. We will also add a camera to assist in vision and detection.