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CS35 Final Project Proposal

**Overview**

Our project aims to combine what we’ve learned thus far in CS35 with applications in the physical world. Our team was particularly interesting in our recent class discussion about how machine learning, pixels, and the physical world come together in the development of self-driving cars. Thus, we wanted to explore how we too could work towards this intersection. Further, not only is playing with robots very fun, but also it is an exciting opportunity to learn about different gadgets and libraries.

Through using robots, our project aims to collect data from the physical world and convert this information into an image created as the objects move. Essentially, we want to write code to control the Sphero robot to move per our demands. As the robot moves, we will collect information about its movement to create an image that will display on our computer screen through applying our knowledge of pixels developed in recent weeks. Meanwhile, we hope to use the Myo robot to change how the Sphero goes about “drawing,” such as by changing the color of what is drawn.

Later developments of our project may include using the robots to create a map of a room and/or using machine learning to then complete the data set collected by the robots.

**Tools and Libraries**

Physical tools:

* Sphero – A robotic ball
* Myo – Armband that reads gestures and motion

Libraries:

* Sphero
* Pyglet
* Myo
* Time
* A keyboard library (undecided)D

**Method and Proposed Timeline**

Week 1 (Ends 4/9):

* Familiarize ourselves with the two robots and their libraries
* Code basic functionality to allow Myo and Sphero to talk to the computer through using Python
* Explore combining code to enable Myo to control Sphero

Week 2 (Ends 4/16):

* Develop code to transform Sphero’s movements into pixel data
* Create preliminary demo
* Prepare a presentation about our motivation and progress [we present on 4/17]

Weeks 3 and 4 (Ends 4/23, 4/30):

* Collect feedback and suggestion from classmates after our presentation
* Work on incorporating new ideas
* Further develop functionality (machine learning?)
* *PROJECT DUE 5/5*