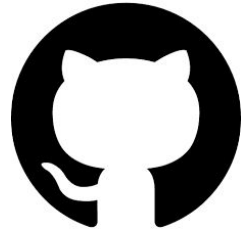


LeapArm

Adam Heaton, Tyler Lugger, Davis McClure, Nhi Nguyen,
Nicky Schardt

Tools - GitHub



GitHub repository interface for **dmcclure40 / 3308_Project**. The repository is a group project for CSCI 3308, featuring 75 commits, 3 branches, 0 releases, and 5 contributors.

Navigation tabs include: Code, Issues (1), Pull requests (0), Wiki, Pulse, and Graphs. The repository is currently on the **master** branch.

Recent commits and files:

File	Description	Time
GripperLeft.cs	Updated gripper code to work as arm rotates	14 days ago
GripperRight.cs	Updated gripper code to work as arm rotates	14 days ago
JointScript.cs	Allows wrist to rotate left and right	14 days ago
Leap.py	Added files used by leapConnect to run correctly. Only leapConnect sh...	2 months ago
Leap.pyc	Worked with everyone to create test cases that confirm Leap Motion co...	14 days ago
LeapArm.unity	completed robot arm scene (no LeapMotion)	14 days ago
LeapPython.so	Added files used by leapConnect to run correctly. Only leapConnect sh...	2 months ago
MoveArm.cs	Moves arm up and down based on arrow keys	14 days ago
README.md	updated readme to show that we are now using unity instead of vrep	7 days ago
TESTING.md	Update TESTING.md	13 days ago
UAT01.png	Adding UATs for the testing markdown	14 days ago

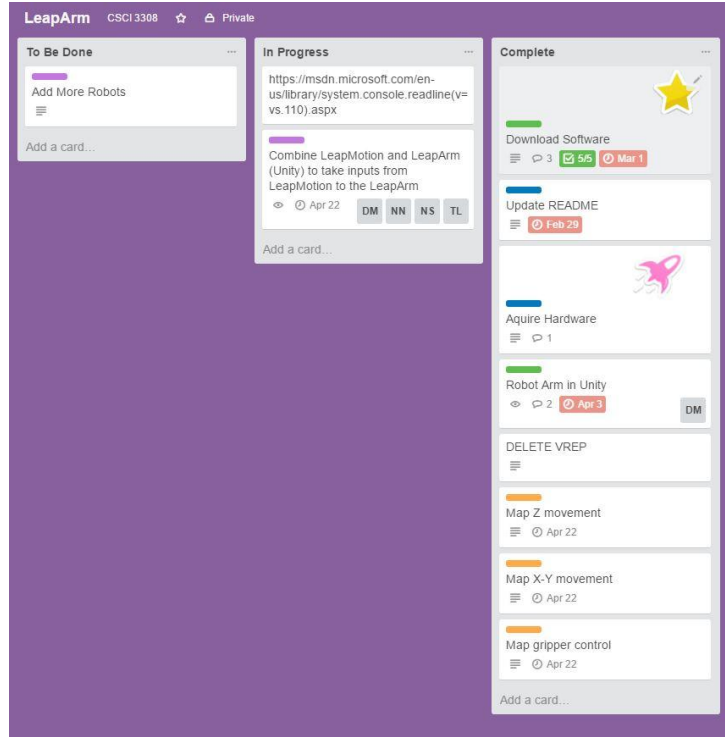
Purpose:

- Code hosting and sharing
- Track changes in code without needing to ask partners.

Rating:

- 5/5 for code sharing easiness

Tools - Trello



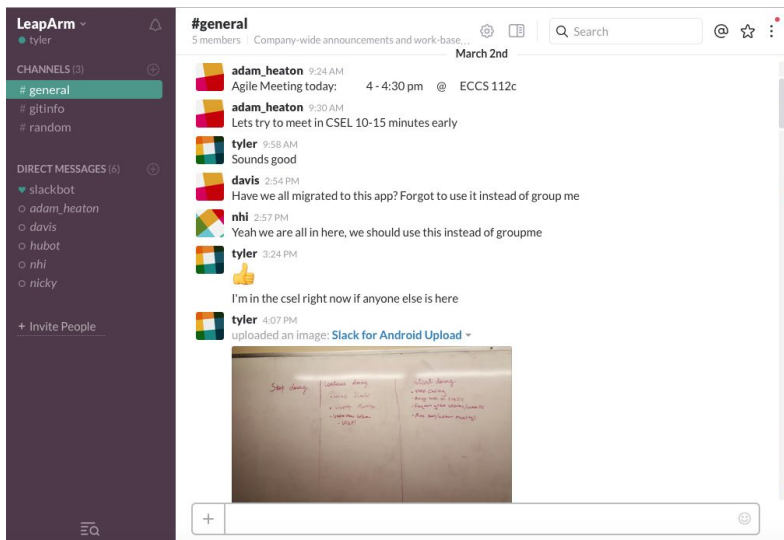
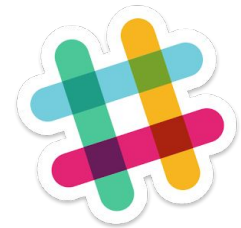
Purpose:

- Serve as a project tracking tool.
- Set benchmarks and assign people/pairs to certain tasks.

Rating:

- 4/5 for team usage

Tools - Slack

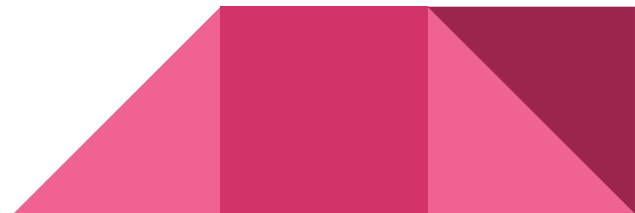


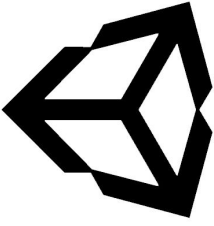
Purpose:

- Team communication
- Trello and Github notifications

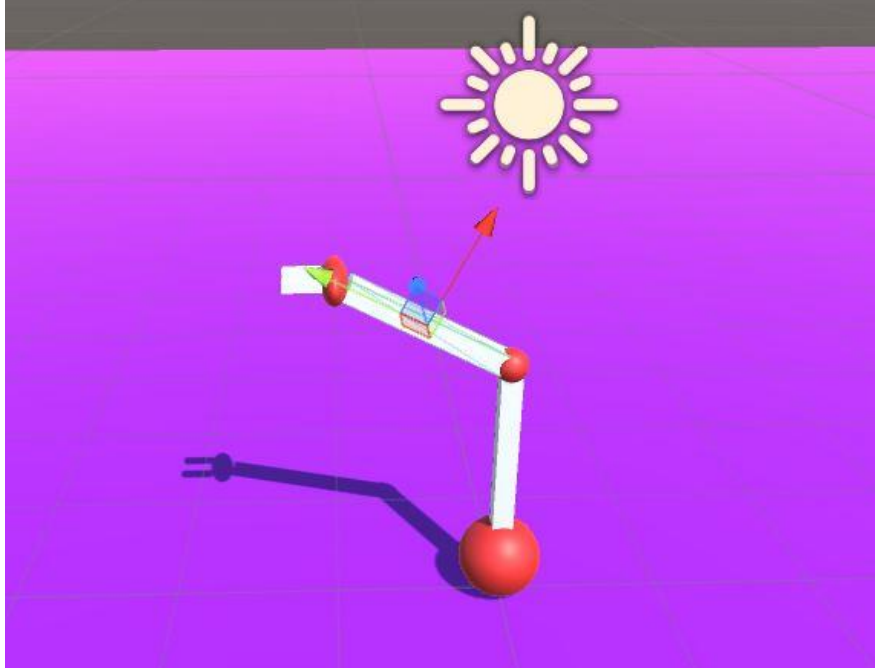
Rating:

- 5/5 for simplicity, efficiency, and visual appeal





Tools - Unity



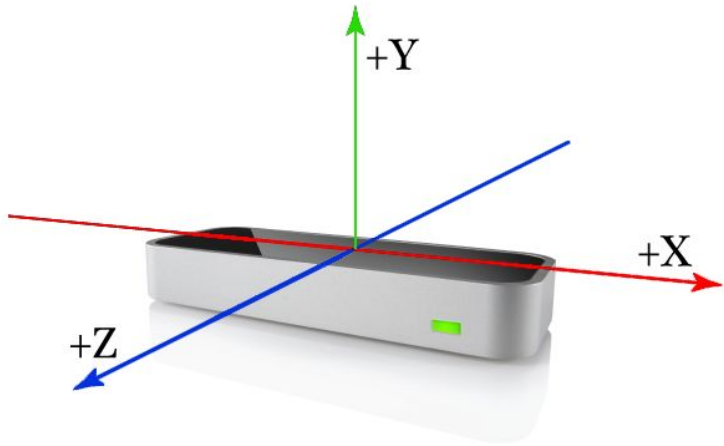
Purpose:

- Simulation of robotic arm.
- Accept Leap Motion inputs

Rating:

- 4/5 efficient to use for our simulation requirements.

Tools - Leap Motion API



Purpose:

- Motion controller that accepts hand motions as input
- Python program returned outputs to a text file

Rating:

- 5/5 Well documented with a lot of example code



Tools - Sphinx

Purpose:

- Used for automatically documenting python code
- Create HTML documentation for leapConnect.py script

Rating:

- 4/5 for ease of use but it was difficult to learn

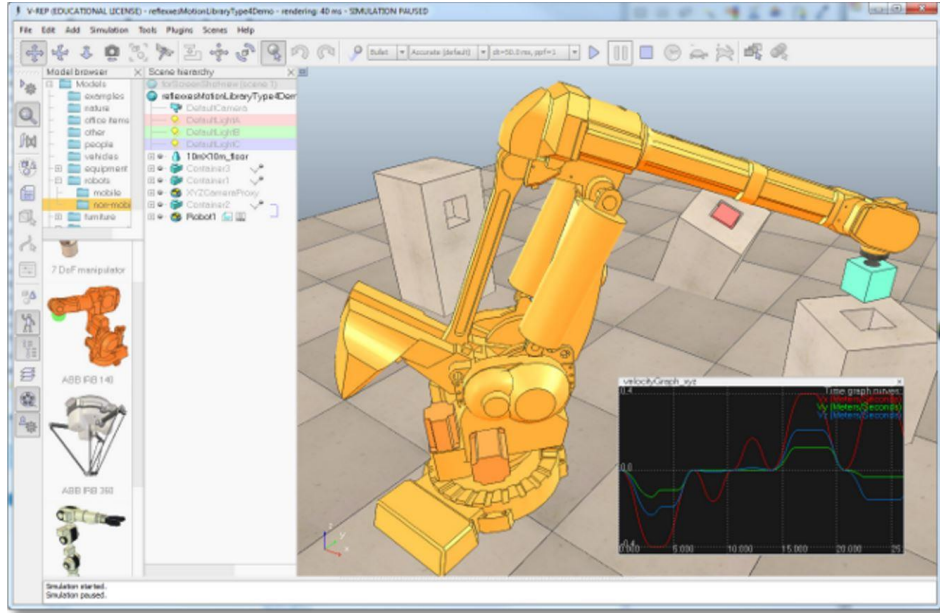


Methodologies



- Pair programming
 - Used for all of our Leap Motion and Unity scripts
- Agile Sprints
 - Used to complete phases of project in month long sprints

Challenges Encountered



- Modeling the arm (V-REP)
 - Few documentation and usage examples
- Connecting Unity and Leap Motion
 - Issues having the two communicate in real time

LeapArm Demo