NASA LEC Robotic Mining Competition

Milestone One Progress Evaluation

Members:

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Accomplished Tasks: Task One

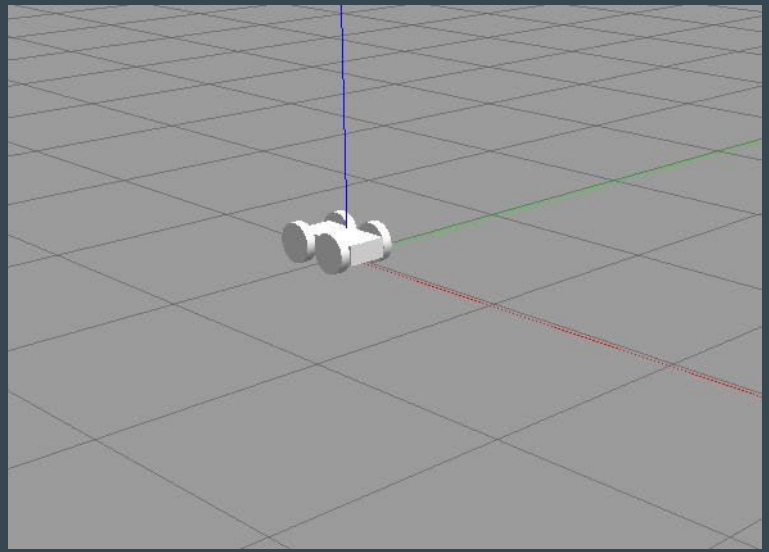
We researched different options for modeling a simulation replica of the physical robot that is going to be entered in the competition. We decided to use a combination of the Gazebo virtual environment and ROS/Python scripting to create and program a model.

GAZEBO

ROS

Accomplished Tasks: Task Two

We created a basic 3D model of a robot, with each wheel and axel set up to be easily programmed to perform basic functions such as forward and backward movement and turning. Eventually it will be refined to directly simulate the physical robot, with a controllable arm and conveyor belt.



Milestone Two Plan

Task One: We plan to write scripts to control the basic movement of the robot simulation inclusive, to begin with, of forward movement, backward movement and turning ability. Eventually we will add a virtual arm to resemble the physical robot's arm for sample collection, which will need to implement upward and downward movement.

Task Two: To control the simulation (and eventually the physical robot) via an Xbox controller. We decided on an Xbox controller over keyboard input because of the ease of use and level of control that come from the joysticks over arrow keys.

Dates of Client Meeting:

- September 14th - via Zoom
- September 21st - via Zoom

Dates of Advisor Meeting:

- September 4th - via Google Meet
- September 27th - via email