

NASA Robotic Mining

Milestone Six Progress Evaluation



Members:



Taylor Ertrachter - tertrachter2017@my.fit.edu

Bailey Hamant - bhamant2017@my.fit.edu



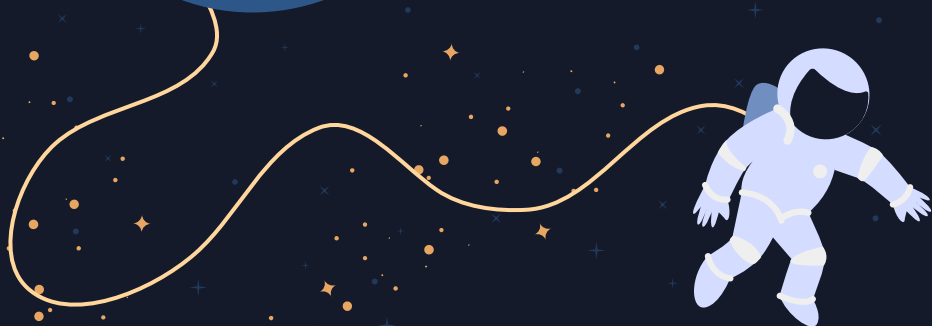
James Spies - jspies2017@my.fit.edu

Faculty Advisor:

Dr. Marius Silaghi - msilaghi@fit.edu

Current Progress Matrix

Task	Completion %	James	Bailey	Taylor	To do
1. Investigate tools	100%	33%	33%	33%	none
2. Hello World demos	100%	33%	33%	33%	none
3. Implement, test & demo <i>Make robot manually controllable</i>	100%	20%	20%	40%	Lead screw movement
4. Implement, test & demo <i>Take accurate measurements with camera</i>	90%	30%	30%	30%	Depth measurement



01

Task One

Make Robot Manually
Controllable

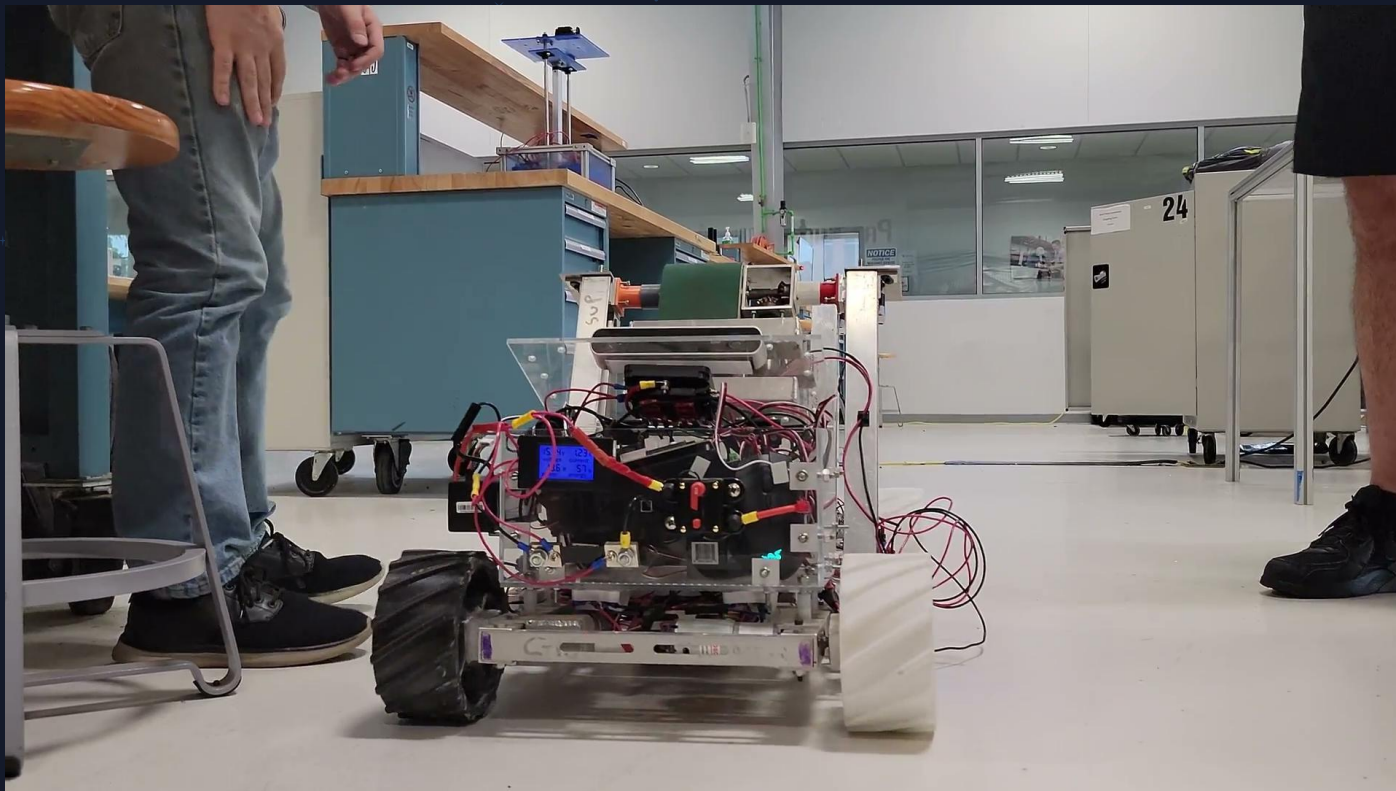
Make Robot Manually Controllable

- Robot can be operated via a bluetooth Xbox controller
- Can be moved forward and backward and it's bucket ladder rotated
- Wheels are moved by setting the rotation angle and adjusting the rotation speed

Make Robot Manually Controllable

- Contrasting rotation angles are set to the front left and back right wheels for left turning, and the front right and back left wheels for right turning
- There are a total of four motors on the robot which we've written control code for:
 - One controls the left side wheels (front and back)
 - One controls the right side wheels
 - One controls the bucket ladder
 - One controls the up and down movement of the lead screws

Make Robot Manually Controllable



02

Task Two

Take Accurate
Measurements with ZED
Camera



Take Accurate Measurements with Camera

- Currently takes accurate measurements of distance
 - Most important perception for autonomous movement and mining
- Would be ideal to include other perceptions such as width, height, and depth
- The focus of this milestone was on getting manual control
 - Would be useful for future teams working toward full autonomy

Thanks!

