# Progress Report #2: March 2019

# Autonomous Vision-aided Vehicle (AVV)

## Overview

The vision was updated by using a PixyCam (PixyCam2) instead of TensorFlow. The PixyCam2 was configured and communication has been established between the microcontroller and the PixyCam. We are now able to get the data of an object that the PixyCam has detected into the microcontroller. An Inertial Measurement Unit (IMU) was also purchased which will be used along with the optical encoders to track where the AVV has gone and to find the shortest path back HOME after an object has been detected and reached. The motor driver was also purchased and tested with the motors and they have been verified and work with the motors that we are using. The main platform has been built by adding 2 axles to the front wheels. Bearings were purchased and used for these 2 axles. Mountings for the components on the AVV have been 3D printed as well as a second layer that will be used to attach more components. According to our Gantt chart and schedule we are behind but we have made a lot of progress in the time since the last progress report and we hope to get the AVV built and moving in the next week or two.

## Milestones Achieved

The goals that have been achieved so far are:

* built platform,
* verified motor driver with motors,
* established communication between the PixyCam,
* acquired and tested IMU,
* 3D printed mounts for the components,
* acquired battery and battery charger.

## Expected Tasks for Next Period

The tasks that we would like to achieve going forward for the next period are:

* establish communication between the IMU and the microcontroller,
* interface microcontroller with sensors (encoders and ultrasonic),
* bring all components together and get the AVV running.

## Issues and Concerns

Some expected issues and concerns going forward may include:

* interfacing all components together to microcontroller

## Schedule/Gantt Chart

