

### **Navigation System (MCU):**

- The Raspberry Pi 4B will utilize the Ubuntu operating system which is a Linux based OS.
- The Raspberry Pi 4B will utilize ROS Noetic in order to calibrate and process data pulled from navigation sensors by creating “shells” within the ROS software and utilizing available open source algorithms.
- The Raspberry Pi 4B will utilize Python 3 in order to develop HD Camera Flash and Image/Video Capture protocols through the use of open source OpenCV libraries.
- The Raspberry Pi 4B will communicate control signals to the Arduinos used in the Mechanical Movement Subsystem through the ROS software
- The Raspberry Pi 4B will communicate via LAN connections to the receiver/controller module, inputting and outputting control signals.