

Weekly Report - Tuesday, April 2, 2019

Auburn University IEEE SoutheastCon 2019 Hardware Competition Team

Current Major Development Tasks

Task Name	Category	% Compl.	Progress Updates
ROS Localization	Software	90%	Fixed the transform error, that was causing AMCL not to work. We now have a readme on how to start AMCL in ROS..
Integrate Encoders in ROS	Software	50%	Encoders now output ticks of a revolution and the direction of the rotation. The encoders now need to be integrated with ROS for communication with the Pi.
Fabricate, 3D Print, Assemble, and Wire New Robot	Electrical	95%	Electronics and 3D printed parts are all fabricated, mounted, and wired except for the encoders.
Test and Tune Full Competition Algorithm	Software	5%	We have agreed upon the strategy for the competition algorithm and have all of the required data inputs

Senior Design Team Members Time Management

Member Name	Task Name	~ Hours Spent (past week)
All Members	Team Meetings	2.5
Matthew	LIDAR Localization and ROS	2
Matthew	Mechanical assembly	5
Nia	LIDAR Localization and ROS	5.5
Joe	Integrate Encoders in ROS	2
Josh	Electrical Hardware Placement	4

Tasks to be Accomplished Before Competition

Task Name	Category	Assignee
Construct 9"x9"x11" interior sizing box	Mechanical	Alex
Attach flag	Mechanical	Matthew
Main and Auxiliary Battery Voltage Detection	Electrical/ Software	Joe
Replace control panel on bot 1	Electrical	Josh
Wire Encoders	Electrical	Joe/Josh
Integrate Encoders in ROS	Software	Alex/Joe
Fix Lubuntu time issue	Software	Nia
Finalize motor control/servo with ROS	Software	Nia/William
Implement push button publisher	Software	Nia/Josh
Subscribe to Navigation on Main Node	Software	Noah
Make Lubuntu autologin	Software	Noah
Setup VNC server on Lubuntu	Software	Noah
Test and Tune Full Competition Algorithm	Software	Full Team

Achievements, Obstacles, and Risks

Mechanically the robot is practically complete minus some minor improvements such as redoing the encoder gears. All the required parts have arrived. The protoboard has been nearly completed save for encoder inputs to the Raspberry Pi. All components have power but still need to be integrated into the main program which will be the goal for the next coming days. There will be some obstacles to creating a node for all of the Arduino communication to ROS, but we're confident that we may be able to build upon the program that can communicate to the LCD screen from ROS to the Arduino. From here on out it is just making sure everything is working together properly and tackling the minor issues as they come up.

Other Information

List of teams we are competing against (that we are aware of):

University of Alabama
UNC Charlotte
University of Kentucky
Virginia Commonwealth University checking in.
Lipscomb University
Clemson University
Pellissippi State Community College
University of Tennessee, Chattanooga
University of Tennessee, Knoxville
University of Central Florida
University of Florida
Bob Jones University
Fortenberry Polytechnic
Murray State University
Virginia Military Institute (VMI)
University of the West Indies, Jamaica

Agenda:

Thursday, April 11th, 2018

- 1:30PM: Departs for HSV
- 5:30PM: Arrive in HSV
- 6:30PM: Meet for dinner @ TBD restaurant
- 8:00PM: End of scheduled activities for the day

Friday, April 12th, 2018

- 9:00AM: Arrive at VBC
- 10:00AM: Practice fields open
- 12:00PM: Leave for Lunch @ TBD restaurant
- 1:00PM: Return to VBC for practice rounds
- 5:00PM: Region 3 Student Group Photo
- 5:30PM: Continue practicing
- 7:00PM: Conference Reception
- 9:00PM: Continue practicing
- 10:00PM: Team Captain Meeting/ Start packing up
- ~11:00PM: Leave VBC

Saturday, April 13th, 2018

- 7:15AM: Arrive at VBC
- 7:30AM: Do a practice run
- 8:00AM: Competition Starts
- 11:00AM: Eat Lunch at VBC in downtime
- 6:00PM: Awards Banquet
- 10:00PM: Leave VBC

Sunday, April 14th, 2018

- 8AM: Depart for AUB
- 12PM: Arrive in AUB, Deposit parts/robots @ SPARC Lab