DPRG RBNV Chat Record – 1/25/2022

Carl Ott 7:43 PM ~7:39pm Ted described his mechanism for managing heading or distance targets - showed diagrams and equations of motion Carl Ott 7:46 PM ~7:45pm Ted showed a video demonstration Carl Ott 7:56 PM ~ 7:54 pm- Chris gave a brief review of his Pololu Romi platform, and then showed progress with running ROS on a Pololu, and implementing waypoint navigation with a nod to David Anderson's playbook... Carl Ott 8:03 PM CHRIS 911 - you're frozen! how cold is it in Connecticut? Carl Ott 8:07 PM ~8:06 pm - while waiting for Chris to rejoin - Paul gave a live demo showing progress with his Mowbot Chris welcome back :-) Carl Ott 8:08 PM Gold Star Count so far: Ted earned a Gold Star. Paul earned a Gold Star... Carl Ott 8:12 PM ~8:12pm - Chris continued with his demo - ROS on a Pololu Romi platform Carl Ott 8:30 PM Chris showed progress in 2 areas: 1) created a 'set of virtual distance sensors' by converting LiDAR scan data (~360 samples per LiDAR rotation) to 12 'virtual sensors' each with a cone of 30 degrees. Carl Ott 8:35 PM and 2) Chris showed his nearly 1:1 adaptation of waypoint navigation algorithm & code which David Anderson presented to DPRG reference https://www.youtube.com/watch?v=nekgAheau9w&t=9866s and here https://www.dprg.org/outdoor-rover-series-implementing-waypoint-navigation-by-david-andersondprg-virtual-monthly-meeting-jun-12th-2021/ with presentation here https://www.dprg.org/wpcontent/uploads/2021/08/revised_dprg_presentation_by_david_anderson-20210820.pdf Carl Ott 8:38 PM ~8:37 pm - Chris showed a demo of the Romi traversing a square Carl Ott 8:40 PM Chris - another Gold Star!

Carl Ott 8:45 PM

 ${\sim}8{:}44 \text{pm}$ - Doug P showed his approach to get sharp corners when driving waypoint routines Carl Ott

8:48 PM

~ 8:47PM Carl showed update of robot DTBW (Duct Tape and Bailing Wire) – finally 'bouncing' between orange cones in both a driveway and the street. In this demo – DTBW is only using a heading PID loop based on absolute heading reported by a BN0055 in full fusion mode, and a reasonably decent and robust computer vision cone detection algorithm running on an OpenMV Cam H7 Plus which controls heading via a simple proportional loop when cone is detected, and open loop speed control with control

~8:51PM Carl gave a live Git walkthrough facilitated discussion- showing various repository setup and management actions using Git, GitHub and VS Code. Follow along here using the repo created during the live demo https://github.com/cottjr/DPRG_GitFunDemo.git

Raj Prabhakar 8:52 PM I got to go, see you all next week :) Carl Ott 9:01 PM https://github.com/cottjr/DPRG_GitFunDemo.git 7 photons 9:08 PM I've got to go, have a good week Chris N 9:27 PM The way I handle this use case: files are on my Raspberry Pi and then I use VS Code "remote" (from different computers) John Gauthier 9:29 PM It's just you. Chris N 9:36 PM Must bail unfortunately.... Carl Ott 10:12 PM For the record - I also handle the Raspberry Pi codebase challenge with the same approach as Chris. i.e.. the codebase 'lives' on the PI and in GitHub, and I use VS Code 'remote' to edit from a good laptop... Carl Ott 10:16 PM ~10:13pm - Doug P - wanted to review & verify understanding of David Andersons approach to map velocity and rotation commands into motor PID loops Carl Ott 10:21 PM Pat Caron 10:31 PM Great topic, but I have to go Harold Pulcher

10:37 PM I&r programs! Doug Dodgen 10:37 PM Going to leave now. I'll catch the remainder on the YouTube. Ray 11:02 PM I must go - thank you all Carl Ott 11:04 PM 11:03pm - John G showed how he connected a Pi Camera face tracker to his Halloween eyes - so that as

he moved his head around, the Halloween eyes tracked him...

Gold Star Count - very productive night! Lots of robot demos: Ted Paul Chris Carl John G