DPRG RBNV Chat Record - 20220111

Ray
7:47 PM

Full membership is $40, remote membership is $39.99 because we need the money and hey - it is only 40 bucks!

Pat Caron
7:50 PM

I suggest $40 CAD

ed mart
7:50 PM

Does the club earn $ from YouTube ?

Carl Ott
7:51 PM

$40 CAD is about $31.93 today

$31.93 US

Pat Caron
7:53 PM

What is SEO

Carl Ott
7:54 PM

Pat: SEO is Search Engine Optimization -> structuring your web site and pages so that the search engine robots like it as much as the humans...

Carl Ott
7:56 PM

Pat - I gave a presentation on SEO to DPRG on 9 May 2020 -> check this out if you like: https://youtu.be/FB-0JFiWYac

ed mart
7:59 PM

Apply for Awesome grant

Carl Ott
8:01 PM

First part of meeting: DPRG Housekeeping - upcoming / needed elections / costs / funding / membership types - etc...

~8:00 - Pat described an issue with his robot - discovered steering overcorrection. After slowing robot down and changing angular velocity

Carl Ott
8:05 PM

was still overshooting even with zero forward velocity - overshooting just when turning the robot. So the discussion led to methods to control heading

Carl Ott
8:06 PM

Ed - is there info you can share wrt the Awesome grant?

Carl Ott
8:18 PM

I shared a Jam file with the meeting: https://jamboard.google.com/d/1s9CDHpF-vfJwLsfnhlxUC-m38gecW7ZCvuKn1AXGw9E/edit?usp=meet_whiteboard

Michael Ivison
8:20 PM

I shared a Jam file with the meeting: https://jamboard.google.com/d/1_2SM71rY-MIWtIGnJKr_tPsgB8MCJRGMLxu7hwpRTFY/edit?usp=meet_whiteboard

Pat Caron
8:23 PM

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Carl Ott
8:30 PM

~ 8:15 or so - the group experimented with shared whiteboard...

Dave Ackley
8:30 PM

check out page 257 section 7.8.2 Feedback Control Loops in "Mobile Robots: Inspiration to Implementation by Joseph Jones and Anita Flynn chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/viewer.html?pdfurl=https%3A%2F%2Fdoc.lagout.org%2Fscience%2F0_Computer%2520Science%2F8_Electronics%2520%26%2520Robotics%2FMobile%2520Robots%2520Inspiration%2520to%2520Implementation%2520-%2520Flynn%2520and%2520Jones.pdf&clen=34366706&chunk=true

David Anderson
8:34 PM

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doug paradis
8:36 PM

Encoder speed can be determined by either of two methods: pulse counting or pulse timing.
Link: https://www.motioncontroltips.com/how-are-encoders-used-for-speed-measurement/

Doug Dodgen
8:38 PM

https://cs.au.dk/~ocaprani/legolab/DigitalControl.dir/NXT/Lesson9.dir/11128_Mobile_Robots_Inspiration_to_Implementation-Flynn_and_Jones.pdf

Carl Ott
8:47 PM

~ 8:42 - Doug P showing sample code to compute heading control for a differential drive system

Carl Ott
9:05 PM

~9:03- David A showed the motor control subsystem from the talk he gave last summer - on how he maps forward velocity and rotational velocity into individual motor velocity setpoints

Carl Ott
9:29 PM

~ 9:25 or so- Carl showed progress with his DTBW robot (duct tape and bailing wire) meant for RoboColumbus. Now finally able to reliably make it back and forth between cones (albeit not pretty

enough yet). Also showed how to use OBS Studio to stream recorded videos with minimal jitter in an online meeting, compared to just presenting a screen scrape. Here's a link to my write-up on using OBS Studio and another tool… https://testbedzone.com/obs-and-ndi-a-powerful-toolset-for-diy-video-produc

Ray
9:40 PM

she's giving it all she's got captain..

You
9:44 PM

~9:35pm Carl Also showed a serial port issue on DTBW– packets not making it from an OpenMV Cam H7 via UART to Mega 2560. Initially from incompatible voltage levels – but then after that fixed - potentially related to an Arduino Mega being unable to keep up with too many time sensitive events colliding (2 channels of software servo, I2C interface to BNO055, regular NeoPixel strip and ring updates, 20ms interrupt based loop timing)…

Carl Ott
9:52 PM

~9:48- Paul gave an update on MowBot electronics. Added hardware upgrades - a Daly 30A battery management system - controls the LiPos and prevents overcharging / over-discharging. Added an ancient 9-DOF IMU and compass. Added an ESP32 Feather. And added an RTK GPS UBLOX ZF9P...

Carl Ott
9:54 PM

Also showed an update to the software operation...

doug paradis
9:54 PM

Paul, BNO055 Adafruit module for $35 + shipping from Robotshop. (in stock) obotshop.com/en/bno055-9-dof-absolute-orientation-imu-fusion-breakout-board.html

Carl Ott
9:56 PM

~9:56 - Paul showed PlatformIO for working with Arduinos

Carl Ott
9:59 PM

also showed editing Arduino code using VS Code on his laptop, and also using VS Code on his laptop to remote SSH into an RPi4

Carl Ott
10:04 PM

10:03 - Paul mentioned that Arduino on MC32 runs FreeRTOS natively - so you can actually make FreeRTOS calls to the low-level controller...

7 photons
10:05 PM

I've got to go, have a good week

Carl Ott
10:05 PM

~10:04 - Paul showed Mowbot SW Architecture concept

Carl Ott
10:11 PM

10:09 - Paul - arguing that instead of serial (e.g. trying to maintain sync) - it's worth considering something that behaves more like UDP. For example, "Packet Serial" - a package found here: https://github.com/bakercp/PacketSerial

Carl Ott
10:14 PM

per Packet Serial documentation - Packet Serial is compatible with other libraries - e.g. This project has been used successfully with openFrameworks using the ofxSerial addon. In particular, see the ofx::IO::PacketSerial object. Additionally this project has been used with Python using the PySerial package. In particular, check out the COBS (see this discussion) and SLIP packages. Ultimately, any library that correctly implements a COBS or SLIP encoding scheme should be compatible with this pr
https://pythonhosted.org/pyserial/index.html

Carl Ott
10:15 PM

e.g. -> COBS (Consistent Overhead Byte Stuffing) https://en.wikipedia.org/wiki/Consistent_Overhead_Byte_Stuffing

Pat Caron
10:22 PM

Got to go. Almost 11:30pm here.
Thanks

Harold Pulcher
10:22 PM

gotta run.... l8r programs!!

Paul Bouchier
10:35 PM

https://www.youtube.com/watch?v=buFKeqbafDI

Carl Ott
10:36 PM

That was a video on how to use Platform IO w/ VS Code

Paul Bouchier
10:37 PM

https://www.youtube.com/watch?v=pHJ3lxOoWeI&list=PLEBQazB0HUyQ4hAPU1cJED6t3DU0h34bz&index=7

Carl Ott
10:37 PM

That is a series of videos on FreeRTOS / RTOS Concepts and FreeRTOS on Arduino

doug paradis
10:37 PM

Paul's link above is for RTOS tutorial series.

David Anderson
10:39 PM

lost audio. gonna log out and back in.