DPRG RBNV Chat Record – 2/2/2021

Robots New Zealand
8:38 PM
Just posted a new NZPRG blog entry: "Differential Drive" https://robots.org.nz/2021/02/03/differential-drive/

Iron Reign
8:53 PM
we've been using line following to calibrate our left vs. right tics per meter for many years.

Ray
9:03 PM
the romi has a 3-axis accelerometer and gyro -- no magnetometor

Chris N
9:04 PM
right. I'm just using the raw gyro data from Romi's LSM33

Ray
9:26 PM
you don't need no stinking BNO055...

Iron Reign
9:27 PM
you can't handle the BNO055!

Webster Brown
9:34 PM
Thank you everyone

Carl Ott
9:34 PM
You're welcome -
Webster- -Did you want to jump in and talk about anything before you bail
sorry but we lost track of the clock...

Chris N
9:39 PM
need to step away for a minute...

Ray
9:43 PM
Case in point Chris got the best result with a gryo read by an 8 bit micro the 32u4...

Carl Ott
9:45 PM
another can of worms question - from time to time, I keep wondering about mechanical mounting, and a problem called "microphonics". As we learned on the job in the early 90's on a sensor stabilization system for a metal tracked military tank - high frequency (or just wrong resonant frequency) from the vehicle chassis was coupling into the gyroscope - which was Piezo based - with the net result that mechanical vibration added bias errors to the gyroscope output

Carl Ott
9:47 PM
So I keep wondering about how we mount these different sensors to our robots. I wonder if part of Chris' better results on the romi, was that by design or dumb luck, that it has better mechanical damping and

less coupling from motor gear trains to the gyroscope - where with other sensors on other platforms, => microphonics problems...

Ray
9:48 PM

The pololu wheels do have perpendicular ridges -- it could be like a small tank..

Carl Ott
9:49 PM

with the mass of these sensor breakouts being so small - I wonder what a 20 Hz mechanical low pass would even look like for those...

Chris N
9:55 PM

Ray, regarding your comment "...gryo read by an 8 bit micro..." : even though the gyro is on the 32u4 board and same I2C bus as the 32u4, I'm actually reading the gyro using the Pi. The 3204 us acting as an I2C slave and the Pi also reads that slave devices (which provides QTR line sensor readings and encoder counts to the Pi....)

It is technically possible to read the gyro using the 32u4, but then the 32u4 needs to constantly switch back between i2c slave and master. Not sure if that would work properly

Harold Pulcher
9:58 PM

Here is the video I was talking about: https://youtu.be/Id11PWxnd4M?t=357

Ray
9:58 PM

Thanks Chris .. I was thinking the kiss principle was in play.

Harold Pulcher
9:58 PM

should start at the encoder I was asking about.

Carl Ott
10:11 PM

Jian - how about this to mount on your robot? https://usa.banggood.com/PIPO-W2Pro-Intel-Cherry-Trail-Z8350-Quad-Core-2GB-RAM-32GB-ROM-8-Inch-Windows-10-Tablet-p-1366841.html?utm_source=googleshopping&utm_medium=cpc_organic&gmcCountry=US&utm_content=minha&utm_campaign=minha-usg-pc&currency=USD&cur_warehouse=CN&createTmp=1

Carl Ott
10:13 PM

here you go - $48 on ebay

https://www.google.com/shopping/product/10543987946739813818?sxsrf=ALeKk00zL3gnIWpWmH9oUYeU7ofWmdxokg:1612325451004&q=cheap+windows+10+tablet&oq=cheap+windows+10+tablet&gs_lcp=Cgtwcm9kdWN0cy1jYxADMgIIADIECAAQGDIECAAQGDIECAAQGDIECAAQGDIGCAAQBxAeMgYIABAeEBgyBggAEB4QGDIGCAAQHhAYMggIABAFEB4QGDoICAAQCBAeEBg6BQgAEM0COgQIIxAnOggIABAIEAcQHjoICAAQBxAKEB46BAgAEA06BggAEA0QGDoICAAQDRAeEBg6CggAEA0QBRAeEBhQ2P4FWOCHBmCgiQZoAXAAeACAAXKIAYoFkgEDNi4ymAEAoAEBqgEPcHJvZHVjdHMtY2Mtd2l6wAEB&

Harold Pulcher
10:18 PM

https://www.youtube.com/watch?v=VH9f89VhWNE

my talk to get started running .NET on a PI

Chris N

10:24 PM

Time to call it a day.. Talk to you all next week...

You
10:25 PM

wixel link: https://www.pololu.com/product/1337

Pat Caron
10:25 PM

Time for me to go also. Thanks

You
10:25 PM

By pat

You
10:35 PM

here is an instructable about adaptive mapping https://www.instructables.com/Adaptive-Mapping-and-Navigation-with-iRobot-Create/

Doug Dodgen
10:39 PM

This Instructable talks about mapping using Wavefront and localization.

https://www.instructables.com/An-Autonomous-Rover/

Robots New Zealand
10:41 PM

getsurreal.com

Carl Ott
10:45 PM

Adafruit FeatherS2 https://www.adafruit.com/product/4769

Teensy family https://www.pjrc.com/teensy/

Raspberry Pi RP2040

https://www.raspberrypi.org/products/raspberry-pi-pico/

Carl Ott
10:47 PM

Shootout: Pi Pico vs ESP32(-S2) and STM32 Blackpill https://youtu.be/cVHCllbN3bQ

Harold Pulcher
10:48 PM

I have to go programs!!!! catch you l8er!

Donna - Seattle
10:50 PM

https://www1.parallax.com/product/28044

https://www1.parallax.com/product/28044

Carl Ott
10:51 PM

Donna - this one is triangulation Distance to a targeted object is calculated by optical triangulation using simple trigonometry between the centroid of laser light, camera, and object.

You
10:57 PM

https://www.robotshop.com/en/benewake-tf-luna-8m-lidar-distance-sensor.html