

DPRG RBNV Chat Record – December 17, 2024

00:05:07.381,00:05:10.381

Mickey Dean: Tom, what is the scale there?

00:05:13.962,00:05:16.962

Mickey Dean: I can't tell

00:05:42.141,00:05:45.141

Paul Bouchier: Hi Radia - feel free to type a question or interject

00:07:16.010,00:07:19.010

Paul Bouchier: Tom C presented an update on his stationary GPS test, showing GPS wandering from 7 or 7 satellites was about 2-3m

00:07:23.860,00:07:26.860

Radia Dakhama: Ok I'm just wondering how is this robot tracking these coordinates of satellites what kind of sensor is it using or does it access coordinates another way?

00:08:20.670,00:08:23.670

Paul Bouchier: @Radia just using a GPS receiver (ublox v6) on a stationary robot, observing how much the GPS position wanders

00:08:37.207,00:08:40.207

Radia Dakhama: Ok thank you!

00:09:58.472,00:10:01.472

Paul Bouchier: Tom has an AI model producing 75% confidence results on an ESP32 Cam looking at a cone, after training.

00:12:17.257,00:12:20.257

Mickey Dean: he is especially good at 2X speed

00:12:43.902,00:12:46.902

Mickey Dean: but he is very thorough indeed

00:14:47.650,00:14:50.650

Paul Bouchier: ESP32 cam has smarts onboard, ESP32 runs the AI model. He's using EdgImpulse.com for building database of images & object to detect, & exports code (probably based on TensorFlow Lite) to run on the ESP32.

00:15:18.249,00:15:21.249

Paul Bouchier: Doug suggested RoboFlow as a workflow to train a model.

00:16:22.546,00:16:25.546

Paul Bouchier: Tom exports model results over I2C or serial

00:17:05.066,00:17:08.066

Mickey Dean: Welcome, to all new visitors, please consider joining our Discord

00:18:05.918,00:18:08.918

Paul Bouchier: Join the Discord server with this invite: <https://discord.gg/sCBfa9uG>

00:18:21.009,00:18:24.009

Mickey Dean: ESPnow makes it even better than Arduino

00:20:53.920,00:20:56.920

Paul Bouchier: There are lots of ways the ESP32 is better than the old AVR-processor based Arduino, (Wi-Fi, Bluetooth, dual core) but what's important is it can run the Arduino development environment to provide an API, libraries, etc.

00:29:27.055,00:29:30.055

Paul Bouchier: Doug showed a GPS BDS GLONASS antenna which is a spiral antenna

00:36:47.776,00:36:50.776

Paul Bouchier: Doug showed V-I curves for an Smraza RPi power supply and voltage loss over the cable that causes RPi low voltage alarms

00:39:08.249,00:39:11.249

Paul Bouchier: Real RPi 5 supplies have sense lines at the connector to adjust voltage driving into power cable, so you get 5V regardless of current draw. Doug recommends using RPi5 supplies for everything to eliminate the IR drop issue

00:48:20.941,00:48:23.941

Paul Bouchier: Doug discussed issues with 5V buck converters that have USB cables & connectors vs. bare wires

00:50:40.119,00:50:43.119

Paul Bouchier: Doug showed a USB cable wire tester from AliExpress that will tell you whether you have a power-only cable or one with data wires too.

00:51:31.890,00:51:34.890

Paul Bouchier: Doug showed a constant current load which can be used to develop a USB power supply V-I curve

00:51:45.835,00:51:48.835

Tom C - Hamilton, ON: The Electronic Load Tool I built a few years ago: <https://www.blogger.com/blog/post/edit/3160987507798839360/542805176733218914>

00:52:13.882,00:52:16.882

Radia Dakhama: Thank you for the great presentation! I will hop off now but join next time to check out what everyone is working on

00:53:47.716,00:53:50.716

Tom C - Hamilton, ON: Opps, here is the correct link: <https://technoexcursions.blogspot.com/2021/>

00:54:04.888,00:54:07.888

Carl Ott: Tom - can you check your link - is there a version of the link not in edit mode?

00:55:16.513,00:55:19.513

Paul Bouchier: Doug showed how sealed lead acid batteries lose capacity at current draws which exceed 0.05C. At 5 amps draw a 9Ah SLA battery has a capacity of 5Ah, & runs for 1 hour

00:57:47.538,00:57:50.538

Carl Ott: Tom - Thanks :-)

00:57:56.673,00:57:59.673

Paul Bouchier: Doug recommended a HobbyWing supply for 2A

01:00:58.918,01:01:01.918

Paul Bouchier: Ray showed an ESP32 board which is powered by USB and has a connector for a battery, so it's not as subject to the USB-cable variances because the battery can pick up the load

01:02:12.516,01:02:15.516

Paul Bouchier: Ray & Tom showed devices that plug in-line with USB-A that display volts & amps

01:04:04.464,01:04:07.464

Paul Bouchier: Ray showed a randomnerdtutorials.com tutorial on using an ESP32-CAM with OpenCV that tracks a colored blob

01:08:09.426,01:08:12.426

Carl Ott: Tom - nice job on the load tester - and other projects. You've got a knack for repurposing stuff in a way that yields quite professional results...

01:08:56.145,01:08:59.145

doug paradis: 5V/3A buck converter with inline fuse and wire connectors:<https://www.amazon.com/gp/product/B0D7P819RW/>

01:32:39.445,01:32:42.445

Blue Steel: Mu-metal is a soft ferromagnetic alloy that's primarily made of 75–80% nickel and 12–15% iron, with small amounts of other metals.

01:32:40.775,01:32:43.775

Blue Steel: <https://en.wikipedia.org/wiki/Mu-metal#:~:text=Mu%2Dmetal%20has%20several%20compositions,sheets%20needed%20for%20magnetic%20shields.>

01:32:44.945,01:32:47.945

Carl Ott: Ray - Google search AI has a nice summary of mumetal https://www.google.com/search?q=what+is+mumetal&rlz=1CDGOYI_enUS640US640&oq=what+is+mumetal&gs_lcrp=EgZjaHJvbWUyCQgAEEUYORiABDIICAEQABgHGB4yCAgCEAAYBxgeMggIAxAGAcYHjIIICAQQABgHGB4yCggFEAAYBxglGB4yCggGEAAYBxglGB4yCggHEAAYBxglGB4yCggIEAAYBxglGB4yCggJEAAYBxglGB7SAQkxMDg4MGowajeoAhmwAgHiAwQYASBf&hl=en-US&sourceid=chrome-mobile&ie=UTF-8

01:37:39.864,01:37:42.864

Ponder SomeMore: discord invite:

01:37:40.550,01:37:43.550

Ponder SomeMore: <https://discord.gg/2jKYtpwx>

01:38:26.559,01:38:29.559

Paul Bouchier: <https://discord.gg/sCBfa9uG>

01:51:25.825,01:51:28.825

Paul Bouchier: Paul showed testing that showed that USB3 connection from RPi4 to hub to SSD destroyed RTK-GPS accuracy

01:52:13.523,01:52:16.523

Paul Bouchier: Paul showed new robot platform - Trakbot - assembled as an R/C vehicle currently but to be modified to make it a robot

02:14:00.225,02:14:03.225

ed mart: Is that robot base u purchased on GovDeals??

02:14:07.449,02:14:10.449

Ponder SomeMore: yes

02:14:17.534,02:14:20.534

ed mart: Sweet!!!

02:14:47.431,02:14:50.431

Ponder SomeMore: it's a very solid platform and everything was working - just had to figure it out

02:19:37.819,02:19:40.819

Ray: Karim - there are no more of the robot base you purchased from GovDeals Correct?

02:22:11.437,02:22:14.437

ed mart: Lot of 6 or 8

02:24:40.940,02:24:43.940

ed mart: C . U .Next year !