

DPRG RBNV Chat Record – Jan 7, 2025

00:04:08.631,00:04:11.631

Paul Bouchier: TomC - presented Camera-based object detection using ESP32-CAM

00:06:32.497,00:06:35.497

Mickey Dean: Personally, I suspect you really need a Jetson family to do any real CV or ML

00:06:48.752,00:06:51.752

Paul Bouchier: ESP32-cam can run OpenCV & TinyML frameworks

00:09:54.837,00:09:57.837

Mickey Dean: very cool tom!

00:10:06.909,00:10:09.909

Paul Bouchier: Tom used Edge Impulse which is a dev environment that lets you specify the data you want to train on, model to train, etc. It's based in Europe, and Tom found it very intuitive. You can train it to find video, audio

00:11:14.647,00:11:17.647

Paul Bouchier: Edge Impulse ask you to state the target HW, & they run a simulator to estimate performance.

00:11:21.229,00:11:24.229

Jim F - CalgaryAB: James. This is JimF-YYC, did I invite you?

00:14:57.818,00:15:00.818

Paul Bouchier: <https://edgeimpulse.com/>

00:18:24.319,00:18:27.319

Paul Bouchier: Tom saw Edge Impulse predict 90% accuracy on cone images, taking about 1/2 second per inference

00:18:53.324,00:18:56.324

Jim F - CalgaryAB: That is impressive

00:19:24.707,00:19:27.707

Mickey Dean: tom, do you get loss functions? and can you adjust weights and biases? just curious.

00:21:03.392,00:21:06.392

Paul Bouchier: Tom found 96x96 Greyscale performed poorly, but 60x60 RGB worked great

00:23:05.870,00:23:08.870

Jim F - CalgaryAB: Multiples of 8x8 might improve a little bit more. Example 64x64

00:26:39.247,00:26:42.247

Paul Bouchier: Tom was able to download an Arduino sketch and libraries from Edge Impulse and it builds an ESP32 Arduino firmware image. If you have one of their supported platforms, they can deliver ready-to-burn images

00:31:13.887,00:31:16.887

Paul Bouchier: Tom found when running the generated model on his camera he got low accuracy and few successful recognitions. He added a B/W then a color display to watch the video.

00:40:32.364,00:40:35.364

Paul Bouchier: Tom found the camera rotated 90 degrees. After fixing, he got much better recognition.

00:53:32.586,00:53:35.586

Paul Bouchier: Tom is very impressed with Edge Impulse

00:57:06.149,00:57:09.149

Pat Caron: Does Tom's AI camera presentation qualify for a black star?

It is significant progress!

01:00:09.170,01:00:12.170

Paul Bouchier: The ESP32-Cam cost \$10

01:01:09.628,01:01:12.628

Paul Bouchier: Black star for Tom, for significant technical progress

01:04:41.300,01:04:44.300

Paul Bouchier: Chris N showed a Arduino Nikola camera - it's about the size of an SD card. Has openMV features, but very limited R

01:04:48.813,01:04:51.813

Paul Bouchier: limited RAM.

01:06:01.614,01:06:04.614

Paul Bouchier: Chris has been trying examples, but many don't work because of lack of RAM

01:08:52.392,01:08:55.392

Paul Bouchier: Chris also showed a power monitor and battery charger, FNIRSI EPS150, \$50 Mini portable DC power supply, capable of delivering 5A @ 30V (150W)

01:15:48.323,01:15:51.323

Paul Bouchier: Monthly meeting smart camera discussion: Doug: Pi-Sight (OakD-Lite w/o depth), Tom: ESP32-Cam, Chris Arduino Nikola, Ray - MaixCam Smart-camera panel.

01:38:45.756,01:38:48.756

ed mart: WHITE SINTRA PVC FOAM BOARD PLASTIC SHEETS 1mm .040" X 24" X 48" \$20US
EBAY

01:46:42.764,01:46:45.764

Paul Bouchier: Paul presented his new indoor robot design: Minniebot

01:55:19.910,01:55:22.910

Paul Bouchier: Pat demo'd about Raspberry Pi Connect, which ships natively with RPi Bookworm (currently in Beta). Let's you connect to your RPi from anywhere. It supports remote screen sharing (like VNC) and remote shell

02:01:30.241,02:01:33.241

Paul Bouchier: Pat showed his new Hantek PC oscilloscope that goes up to 500k Samples/sec

02:02:14.700,02:02:17.700

Ted Meyers: 500 K or M samples?

02:02:35.559,02:02:38.559

Ray: hopefully M

02:02:39.461,02:02:42.461

Paul Bouchier: 500M Samples/sec

02:02:59.067,02:03:02.067

Ted Meyers: That sounds better!

02:03:18.912,02:03:21.912

Pat Caron: It says 45, 150, 250, 1G

02:03:47.727,02:03:50.727

Pat Caron: I think it depends on the model. I have the Hantek 6022BL

02:05:21.458,02:05:24.458

Carl Ott: Tom - the other open source instrument driver I was thinking of is
https://sigrok.org/wiki/Main_Page ---- can't wait to try the one you mentioned with my old
Hantek DSO-2090 <https://github.com/OpenHantek/openhantek>

02:06:06.923,02:06:09.923

Pat Caron: The one I bought is:

https://www.amazon.ca/gp/product/B0BB7MQFXD/ref=ppx_yo_dt_b_search_asin_title?ie=UTF8&psc=1

02:07:23.047,02:07:26.047

Pat Caron: Great meeting.

See you next week

02:08:38.044,02:08:41.044

Paul Bouchier: <https://www.ticketdfw.com/event/welcome-mat-2-people-0>

02:14:35.063,02:14:38.063

Chris N: Time's up for me. Good night!

02:14:46.548,02:14:49.548

Paul Bouchier: Paul advertised a DPRG trip to the theater on Sunday Jan 19 at 4pm, where MikeW has robots in an immersive theater show

02:16:14.315,02:16:17.315

Carl Ott: Pat - did you find a readymade OpenHantek build, or did you compile your own? Any idea what version is current? The repo doesn't seem to have any build artifacts - and I'm a little hesitant for mirrors like sourceforge...

02:26:35.356,02:26:38.356

Paul Bouchier: Discussion of DGPS (vs. RTK GPS). An example project is <https://github.com/opensdgps>