

## DPRG RBNV Chat Record – Aug 10, 2021

Carl Ott  
7:37 PM

21 August "RoboColumbus-Plus" Outdoor Rover Competition <https://www.dprg.org/robocolumbus-competition-2021/> <https://www.meetup.com/Build-More-Robots-with-DPRG/events/279974940/> Register Here <https://www.eventcreate.com/e/dprg-robocolumbus-2021>

Jim F - CalgaryAB  
7:46 PM

Hello Robotics Enthusiasts!

Carl Ott  
7:46 PM

~ 7:39 -> Doug P showing progress on his rover strategy using an Ardupilot (to get near the cone), and then enter the 2nd strategy (to get up to the cone and touch it - using a Pixie Cam)

Carl Ott  
7:48 PM

Doug showed his add-on encoder (3d printed), and also his PixieCam 2.1 based cone detector. (:PixieCam 2.1 has 80 degrees FOV)

Doug is using an Ardupilot, APM 2.6. REcommended if didn't already have one, going with an up to date PixHawk

Jim F - CalgaryAB  
7:50 PM

I like to see / hear about everyone's different approach and strategies to this friendly contest. And their build experiences.

@carl ^^

Carl Ott  
7:51 PM

Jim - let's ask... :-)

~7:51 - Doug showed method to insert auxiliary power in after the power switch

Carl Ott  
7:54 PM

~7:52 - Doug mentioned a new AI camera system- the vizycam <https://vizycam.com/>

Carl Ott  
8:04 PM

~8:03 - Ted gave an update on his robot. Using OpenMVCam (with blob detection)

Carl Ott  
8:05 PM

Teds' - stops when the cone gets big in the view.

Jim F - CalgaryAB  
8:07 PM

Greetings Program Harold.

Carl Ott  
8:09 PM

Ted using simple interface from OpenMV cam, - one binary line for turning left, one binary line for turning right, and another line for (???) getting close

Carl Ott  
8:10 PM

Ted - using odometry and compass for heading.

Carl Ott

8:11 PM

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Robots New Zealand

8:11 PM

Everyone is welcome on the Personal Robotics chat server on Discord, where we have about 125 members now. <https://discord.gg/Jw7tc8KG>

Carl Ott

8:14 PM

~8:12 - Doug D showing an approach to add more personality to his robots - a kit that used servos to move arms - inspired by Wall-E.

then talked about motors with (or without) torque

Doug P.

8:22 PM

Doug, This is my go-to motor when making a small indoor robot. <https://www.pololu.com/product/4866>

Carl Ott

8:22 PM

~8:20 - Murray talking about environments - different kinds of surfaces - here's a snippet from that conversation

On the Discord channel the subject of wheels and casters came up and it occurred to me to try to enumerate the various environments we might expect our robots to operate in, as this can help people figure out what kinds of wheels, casters, tank treads, etc. they might consider. A robot designed for a smooth floor can't be expected to operate up in the mountains or on the beach, and if smooth floors are all that's expected the need for large wheels or stair-climbing ability seems overkill. So he

Jason B

8:22 PM

I could use some recommendations for a Power Wheels... that "platform" is really hard to get traction on anything without a child in it.

Karim Virani

8:23 PM

put a sack of sand in it

Carl Ott

8:23 PM

So here's a first crack at the list of possible robot working environments:

Jason B

8:23 PM

then I go over the weight limit for the competition...

Carl Ott

8:23 PM

- entirely smooth vinyl, wood or concrete floor, indoor
- mostly smooth wood or tile floor, indoor
- typical indoor flooring, with transitions (smooth, tiled, carpet and rug)
- relatively smooth outdoor (concrete sidewalk, wood deck, parking lot)
- moderately even suburban outdoor (concrete, lawn, transitions, but no

stairs, curbs, or cliffs) • challenging suburban outdoor (uneven concrete, curbs, stairs, cliffs) • wild environments (sand or beach, up in the mountains, tree branches, rocks  
• snow • water surface • water surface/amphibious • underwater • airborne • outer space or other planets  
There's also the notion of whether a robot can handle rain or spray. Or on a beach, can it avoid the waves? Apparently some \*prefer\* the waves... See:

<https://service.robots.org.nz/wiki/Wiki.jsp?page=RobotOperatingEnvironment>

Karim Virani

8:26 PM

powerwheels: make "snow chains" out of surgical tubing

Carl Ott

8:27 PM

~8:25 - Scott G showing his robot progress. "TURD" for 'Terribly Unreliable...'

Ted Meyers

8:29 PM

Power Wheels -- replace wheels with harbor freight wheels; downside is that you have to make wheel adapters.

Karim Virani

8:31 PM

spray the wheels with rubberizing compound

wrap them in barbed wire

Ted Meyers

8:31 PM

Glue/screw rubber mats to the wheels

But, you might have problems with too much traction and torque for the motors

There is a reason why they are slick

Carl Ott

8:34 PM

Scott G - using Nav/IO board / a hat on top of a Raspberry Pi. Has ported subsystems from his BURP robot into this "TURD" platform...

Robots New Zealand

8:34 PM

Some of the Euro competition robots screw small toothed metal strips to their wheels (parallel to the axle) which permits them to climb on rocks etc.

Carl Ott

8:34 PM

Scott G - using an original Pixie for Blob-Detection.

Ray

8:35 PM

<https://www.surpluscenter.com/Wheels/Wheel/Semi-Pneumatic-Wheels/Black-Plastic-Wheel-w-56-Tooth-Gear-1-5351.axd> these have deep tread ...

Carl Ott

8:37 PM

~8:35 - Scott discussing issues with the NavIO board - things not working quite as expected...

Ted Meyers

8:39 PM

There is a robot name: PUF (Pent up Frustration)

Carl Ott

8:40 PM

nice - PUF

Carl Ott

8:42 PM

More INfo about the upcoming contest here:

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Here <https://www.eventcreate.com/e/dprg-robocolumbus-2021>

Pat Caron

8:44 PM

Canada mtg phone number

Canada (CA) +1 226-213-8281 486 974 086 6277#

Ray

8:45 PM

making bacon ??

Carl Ott

8:46 PM

~8:46 Kelly Taylor- showing a modular design for a rover chassis

Kelly Taylor

8:47 PM

<https://cattern.com/stl/project/cr1515>

Jim F - CalgaryAB

8:50 PM

@kelly Taylor ROS is used on ExoMy

Carl Ott

8:52 PM

~8:51 - Glenn M - showing a Spot Micro robot build - making progress

Kelly Taylor

8:54 PM

ExoMy is interesting. One of the builders in my Facebook group may be using it soon.

Carl Ott

8:56 PM

Here's the project home page for the Spot Micro AI <https://spotmicroai.readthedocs.io/en/latest/>

Harold Pulcher

8:57 PM

Xmo == exomy robot. it is a great platform.

Carl Ott

8:58 PM

~8:58 - Glenn going through issues in printing & building the Spot Micro AI

Carl Ott

9:06 PM

~ 9:05 - Glenn also working on an InMoov robot build- has the head and an arm so far... <https://inmoov.fr/>

Karim Virani

9:11 PM

Sorry, I gotta dip. I'll ask my question on the list

Glenn Mossy

9:11 PM

<https://inmoov.fr/youvideo/>

Garreth Wilcock

9:12 PM

Really interesting to see y'all present your projects. Got to fly. Thanks! So much to learn!

Glenn Mossy

9:16 PM

<https://inmoov.fr/youvideo/>

<https://spotmicroai.readthedocs.io/en/latest/>

<http://www.camera-module.com/product/others/nvidia-jetson-nano-camera-module-8mp-sony-imx219.html>

<https://developer.nvidia.com/embedded/jetson-nano-2gb-developer-kit>

Glenn Mossy

9:28 PM

<https://www.thingiverse.com/thing:3445283>

Carl Ott

9:29 PM

~9:28 - Pat gave small update - USB to SSD adaptor / sometimes disconnecting a hardware in the middle of his robot run...

Carl Ott

9:32 PM

FWIW - I've used this adaptor for it's intended purpose (laptop SSD upgrade), and it worked well and is quite small [https://www.amazon.com/Crucial-Easy-Laptop-Install-2-5-inch/dp/B00C981DDY/ref=sr\\_1\\_3?dchild=1&keywords=crucial+ssd+clone+kit&qid=1628649066&sr=8-3](https://www.amazon.com/Crucial-Easy-Laptop-Install-2-5-inch/dp/B00C981DDY/ref=sr_1_3?dchild=1&keywords=crucial+ssd+clone+kit&qid=1628649066&sr=8-3)

[https://www.amazon.com/Crucial-Easy-Laptop-Install-2-5-inch/dp/B00C981DDY/ref=sr\\_1\\_3?dchild=1&keywords=crucial+ssd+clone+kit&qid=1628649066&sr=8-3](https://www.amazon.com/Crucial-Easy-Laptop-Install-2-5-inch/dp/B00C981DDY/ref=sr_1_3?dchild=1&keywords=crucial+ssd+clone+kit&qid=1628649066&sr=8-3)

Pat Caron

9:32 PM

<https://github.com/Drewsif/PiShrink>

Ian Potter

9:33 PM

gotta roll. catch yall later

Carl Ott

9:33 PM

PiShrink cool utility to shrink a Pi image onto an SSD

Carl Ott

9:35 PM

~9:34 - Pat describing progress with his robot - communications latency issue - individual components working well, but when run everything together, run out of time...

was using MQTT, and now trying Python Q, but is getting about a 30 second lag...

Carl Ott

9:38 PM

~9:36 - Murray showing a real-time OS running on his Pi, with a PID loop

Kelly Taylor

9:39 PM

Were you running MQTT on the rovers's Pi? You should consider running on a seperate Pi Zero.

Pat Caron

9:48 PM

Thanks guys have a good night!Is there a mtg Saturday?

Doug P.

9:52 PM

Pat, No meeting Saturday.

Carl Ott

9:53 PM

~9:51 - Harold gave an update - software woes...

Kelly Taylor

9:55 PM

This is couple from Plano, is in NZ now. <https://www.youtube.com/watch?v=rUW-RubrouE>

Kelly Taylor

9:58 PM

That sounds like he is reading a character stream, instead of a string.

arl Ott

10:02 PM

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Robots New Zealand

10:02 PM

robots.org.nz

Carl Ott

10:03 PM

10:03 - John G giving an update on his motor driver

Doug Dodgen

10:04 PM

getting the number represented by a single character of a string in python by `ord(somestring[0])`

oops thats ORD not ORG

Doug Dodgen

10:06 PM

so you could use a loop counter to cycle through the string to get the value of each character instead of just the first character as shown above.