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ARCHIVE

Great Guide to Solo Python Script

Found here by Dan McKinnon on DIY Drones

The robotics future is bright in Room 28 at McAuliffe Elementary

Mr Zapata and his 4th grade class at McAuliffe Elementary School in McAllen, TX sent 3DR this great essay they wrote for an autonomous robot that helps their town. Thanks for sharing!

"We want to create a robot that will help poor people in the city. It will give poor people food, water bottles, and clothes. It goes by itself looking for poor people and hand them the essentials they need with its robotic hands. The food, clothes, and water bottles will be stored in its stomach compartment. The robot will move around town with their road wheels. The robot will be 5 ft and 4 inches in height. It will have a little head, a pretty big body (so it could store food, water bottles, and clothes) and road wheels. Robots need a body structure, a muscle system to move the body structure, a sensory system that receives information about the body and surrounding environment, a power source to activate the muscles and sensors, a brain system that processes sensory information and tells the muscles what to do.

   To make the robot the following will be needed:

1)   Aluminum $0.48

2)   Balsa Wood $27.47

3)   Carbon Fiber $69.95

4)   Lithium Ion Battery $300

5)   Styrofoam $50.00

6)   Vacuum Forming Basics

7)   Velcro

8)   Tape

9)   Epoxy

 The purpose for this robot is to help poor people by giving them food and help them be healthy. This robot that we want to create can really help poor people and giving them food is the best thing we can do for them right now. Our goal is to aid poor people with their daily need to eat. That way they can use their money for something else like clothing and shelter."

1 note

Monitoring Costa Rican natural resources using Solo

Dr. Eben Broadbent and Dr. Almeyda Zambrano, co-directors of the Spatial Ecology and Conservation Lab at the University of Alabama, led a 2 day workshop in San Jose, Costa Rica with the equivalent of the Environmental Protection Agency (SETENA MINAE). During the workshop, they trained 15 government employees on how to map with Solo for environmental monitoring and enforcement. Costa Rica is one of the most biodiverse countries on the planet, but has numerous problems related to unsustainable and illegal use of natural resources. Solo enables more precise evaluation of Costa Rican ecology.

The SPEC Lab would like to provide MINAE with the equipment and the training to fully integrate 3DR Solo equipment into their activities. To contribute to their efforts, click here.

Solo surveys giant Mongolian trout

Taimen Conservation Fund scientist Ganzorig Batsaikhan with the 3DR Solo.
Ganzorig is working with the Jensen Lab at Rutgers University to count taimen, the world's largest trout, from the air in Mongolia's Eg River. Those are some big fish!

3DR attends AGU

Members of our flight operation team took a turn at the 3DR booth at the 2015 American Geophysical Union meeting in San Francisco. We had lots of interesting conversations with a range of scientific fields using drones for data collection.

Some aerial shots of Biosphere 2 taken with 3DR's Solo. Biosphere 2 was originally designed as a closed-systems experiment of different ecosystems with active research continuing with teams of multidisciplinary scientists. The facility is now fully operated by the University of Arizona.

Studying the geologic world using Solo

Limestone caves are found widely throughout much of the Yucatán Peninsula of Mexico. Cave formation begins when CO2-rich rainwater (which is slightly acidic) chemically reacts with limestone bedrock. Physical erosion then occurs with the flow of rainwater over long periods of time, further developing vast underground cave networks. 'Cenotes' are the sink holes created by the collapse of the limestone cave ceiling.

This particular cenote was shot from the air using Solo outside of Merida, Mexico by 3DR's Dave Surber.

3DR met up with Carlie Wiener from the Schmidt Ocean Institute for an interview on her radio show All Things Marine based out of Hawaii to discuss drones in science and education. This is a great radio show to subscribe to and you can hear our conversation start up about two-thirds of the way through the show (around the 37 minute mark). Thanks Carlie for having us on!

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Fullscreen

3DR has partnered with Chris Lum and the University of Washington (UW) in their active research programs and expertise in UAS. The Autonomous Flight Systems Laboratory (AFSL) conducts drone related research in areas such as:

• UAS for precision agriculture and farming.
• Topographical, ecological, & biological monitoring w/ UAS.
• UAS operator/pilot training and interface design.
• UAS flight control and avionics verification and validation.
• Operation of UAS in GPS-denied environments.
• Wildfire monitoring and detection using UAS.

- Control of networked UAS systems.
- Collision awareness, avoidance, and airspace management.   •
Search and target identification
- Path planning with realistic weather models
- Geomagnetic surveying

Keep up the good work Huskies!
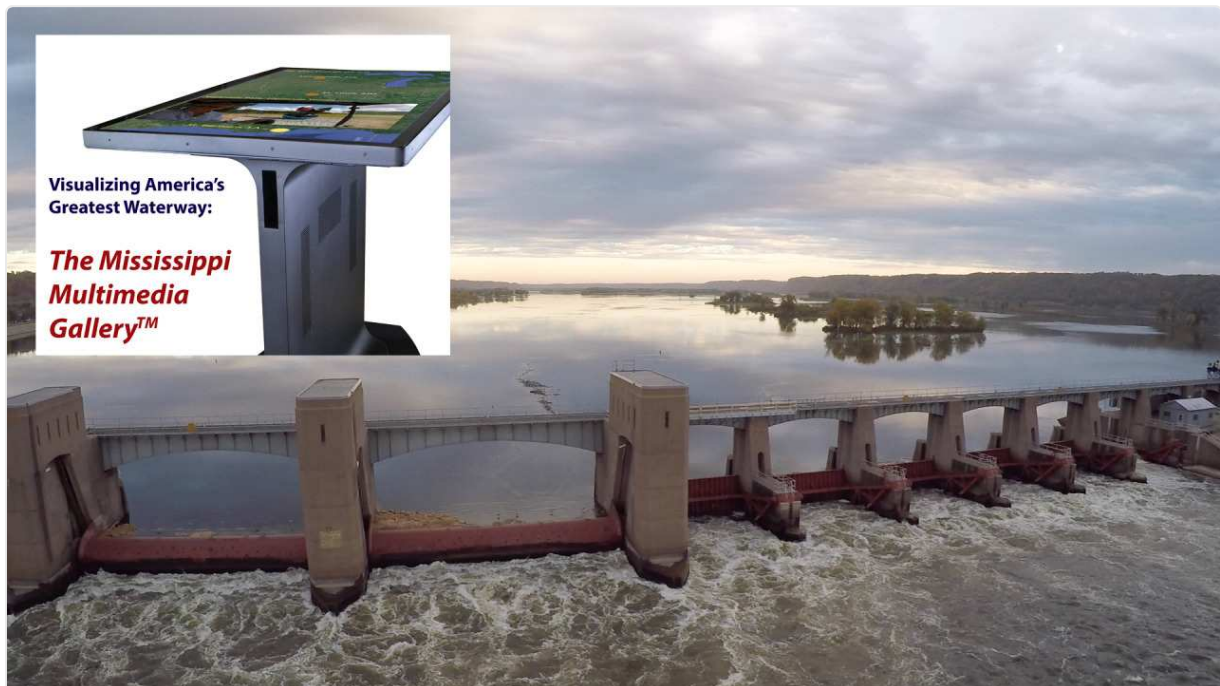
John Shepard is an Associate Professor at Hamline University and the Assistant Director at the Center for Global Environmental Education. In a new, exciting initiative, John used 3DR's Solo in the creation of the Mississippi Multimedia Gallery™. This project offers national audiences a museum-quality, immersive exploration of the Mississippi River from its headwaters to the Gulf of Mexico. The program's large-format (55"), multi-touch, ultra high-resolution (4K) table-top computer kiosks bring the riverway vividly to life through highly detailed map explorations and compelling stories told through high-definition video and immersive panorama photography.

This is a fantastic use of Solo and drone technology in complementing existing multimedia methodologies and we are excited at 3DR to support John's team in their endeavors.

Wetlands outside Snohomish, Washington

Wetlands mitigation commonly occurs when compensation is needed for unavoidable impacts, such as a development projects, to wetlands in an another area. The ultimate goal is to replace the functional role of a wetlands, or the 'ecosystem services' provided, such as water filtration or support of biodiversity.

Drones provide an ideal tool to study the impacts of wetland loss or subsequent restoration over time.

(GeoTiff created by Kelsey Breseman using 3DR Solo)

Spent a rainy day down at Stanford with John Selker and John Burnett from Oregon State who were giving a CTEMPs workshop. Make sure you check out the Center for Transformative Environmental Monitoring Program, a pretty cool NSF funded collaboration between Oregon State and Nevada Reno.

About a dozen and a half students from UC Berkeley, including staff from the Jacobs Institute for Design Innovation, stopped by 3DR to chat about drones, watch some flight demos, and attend Friday FlyDay. Always great to have folks come down the road from Cal! Go Bears!

3DR attended the 2015 BayGeo holiday party and had a fantastic time talking with some of the Bay Area's geographic talent. Dr. Nicholas Bauch gave a really interesting talk on the historical mapping of the Grand Canyon and Jenny Odell walked us through her virtual road trip. Some serious ice cream followed.

3DR spoke at GIS Day 2015 held at UC Berkeley's Mulford Hall and sat on an industry panel to discuss the future of spatial data in the drone space. Happy 10th anniversary to the Geospatial Innovation Facility at Cal!

Rainbow Basin (shot with Solo) is a fascinating area in the Calico Peaks Range outside Barstow, California. Its a popular stop for many geology courses interested in everything from the Cretaceous batholith to Cenozoic fossil assemblages. Rock on!

Stephen Haviland and colleagues in the School of Aerospace Engineering at Georgia Tech use Pixhawk to study obstacle avoidance and mapping.
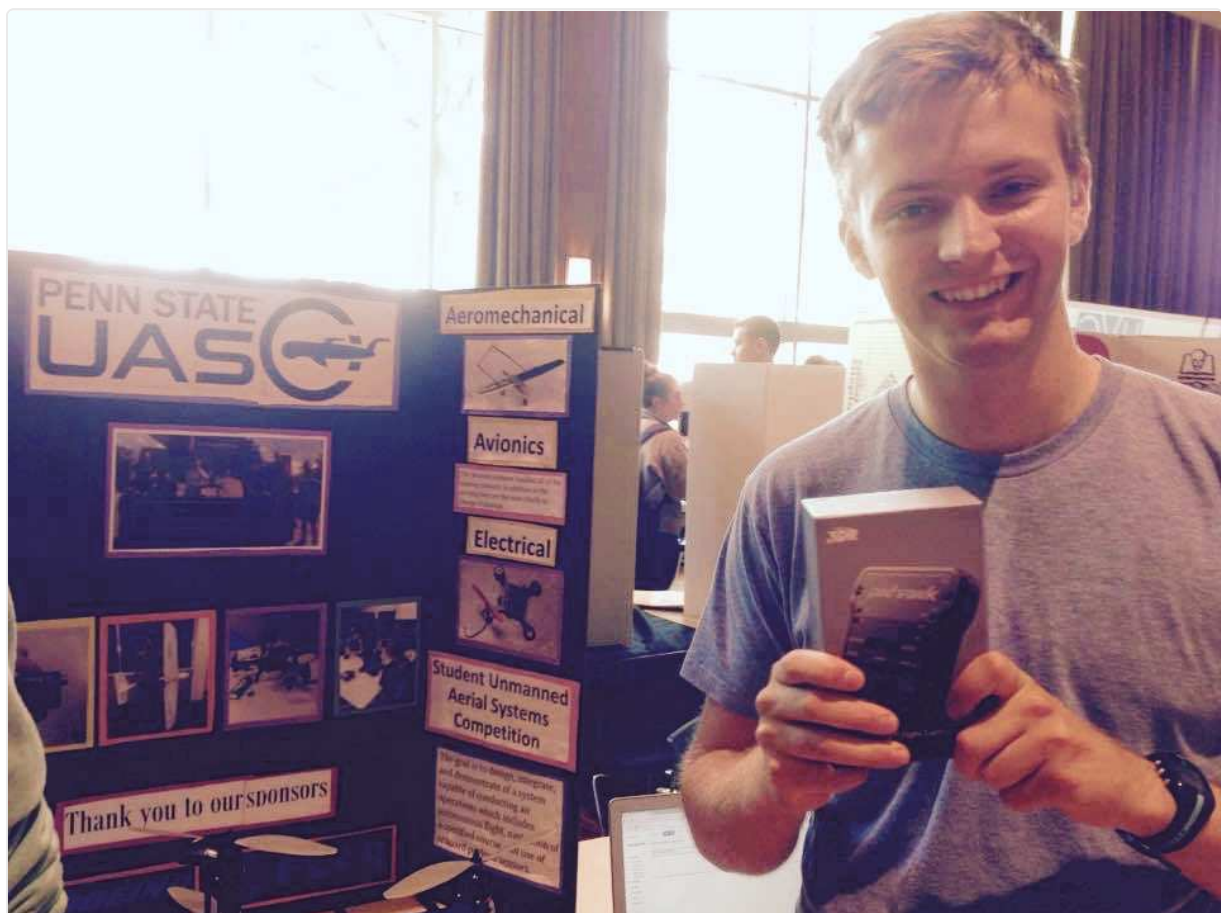
Jonathon Ready, Founder & team leader for the UAS team at Penn State, holds up the new Pixhawk for planes they are building. Go lions!

Anti-mosquito multirotors: Researchers at Rutgers University use Pixhawk autopilots to study UAVs for precision pest management.