

People & Places

Spearheading digital ag initiatives

By PADMA NAGAPPAN
For the Capital Press

DAVIS, Calif. — Ali-reza Pourreza is exploring pathways to convert aerial images from drones that monitor crop fields into data that farmers can use.

A faculty member at the University of California-Davis and the UC system's cooperative extension, Pourreza's specialty is digital agriculture.

"We develop interpretation models to make sense of the data that's collected from the orchard or farm," Pourreza said. "Specifically, we do aerial imaging using drones with different sensors, analyze it, and convert it into actionable recommendations for crop yield, nutrition and disease."

In line with precision agriculture, what he and his team focus on is stitching the images together for a comprehensive view of the field, and interpreting it.

They then use the interpretative models as decision support tools to come up with custom recommendations for each section of a field — as opposed to conventional methods in which growers manage entire fields the same.

He works with a variety of specialty crops, ranging from tree nuts such as almonds to fruits such as citrus and table grapes.

Virtual orchard technology describes the canopy geometry of each individual tree in an orchard. Orchard topography, individual tree canopy cover, volume, height, size and spacing can then be estimated to generate prescription maps for precision management of the orchard.



Courtesy photo

Through his work, Alireza Pourreza helps farmers interpret the images drones produce.

This technology has several applications, from orchard monitoring and management to yield forecasting, mapping blossoms, robotic pruning and thinning, variable pesticide application, harvest irrigation and nutrient management.

"To get viability data we need large-scale monitoring devices, typically cameras," Pourreza said. "We collect both visible and invisible data, and nutrition status of different plants."

He evaluates nutrition status based on color grading — assessing the leaf color if a plant is under nourished as opposed to when it's getting sufficient water and nutrition.

Invisible data refers to

Western Innovator

ALIREZA POURREZA

Education: University of Florida, Ph.D in agricultural engineering

Age: 38

Title: Faculty member at the University of California-Davis College of Agriculture, Department of Biological and Agricultural engineering

Research focus: Digital agriculture.

Personal: Married with one infant son.

Based in: Davis, Calif.; has a second lab in Kearny UCCE center

Website: digitalag.ucdavis.edu

Laboratory Twitter: @DigitalAg_ucd

Twitter: @alirezapourreza



images that may not be easily visible to the human eye. He explained how people can see only a small por-

tion of the electromagnetic spectrum.

"We cannot see ultraviolet light, but still it can harm

our eyes. That's why we wear UV glasses," Pourreza said. "But plants have signals in some of those invisible ranges. They will look similar to the eye, but with captured images we can distinguish nuanced differences in their color. It's like a night vision camera that works in non-visible bands."

The sensors he works with can be customized for different purposes, from assessing crop health to nitrogen efficiency. His team also creates software to help analyze the hundreds of images that drones generate.

"Many growers have drones with cameras, and my work in the digital ag lab is helping them learn how to use it in the right way."

Submit upcoming ag-related events on www.capitalpress.com or by email to newsroom@capitalpress.com.

SATURDAY, FEB. 8

Oregon Pork Producers Annual Meeting and Workshops: 8 a.m.-4 p.m. Oldfield Animal Teaching Facility, 3521 SW Campus Way, Corvallis, Ore. Please email your RSVP by Feb. 1 to ensure enough seminar materials and lunch. Contact: oregonporkproducers@gmail.com

WSU Extension Forest Owners Winter School: 9 a.m.-4 p.m. WSU Vancouver Library, 14204 NE Salmon Creek Ave., Vancouver, Wash. This Forest Owners Winter School will provide an opportunity for landowners to gain experience from experts on a wide variety of topics related to forest management and stewardship. Classes will cover wildfire, forest health, climate change, soils, native tree identification, tribal uses of forestlands, mushroom cultivation, landowner assistance programs, thinning, planting, wildlife, and more. A complete list of classes will be available at forestry.wsu.edu prior to the event. Cost is \$35 per person or \$45 per family. Information: forestry.wsu.edu. Contact: 360-740-1213 or patrick.shults@wsu.edu.

TUESDAY-THURSDAY, FEB. 11-13

World Ag Expo: 9 a.m.-4 p.m. International Agri-Center, 4500 S. Laspina St., Tulare, Calif. World Ag Expo is the world's largest annual agricultural exposition. More than 1,500 exhibitors display the latest in farm equipment, communications and technology on 2.6 million square feet of exhibit space. Free seminars focus on a variety of topics important to dairy producers, farmers, ranchers and agribusiness professionals. www.worldagexpo.com

WEDNESDAY-THURSDAY, FEB. 12-13

Food Processing Expo 2020: Santa Clara Convention Center, 5001 Great America Parkway, Santa Clara, Calif. California League of Food Producers presents the state's top processing show. Contact: California League of Food Producers, 916-640-8150 Website: www.food-processingexpo.org

THURSDAY, FEB. 13

Landscaping for Fire Prevention: 1-4 p.m. UI Extension Office, 6447 Kootenai, Bonners Ferry, Idaho. Rural homeowners can lessen the risk of wildfire damage by modifying their houses and landscaping. Those wishing to pre-register should sign up at the UI Extension office in Boundary County by Feb. 11. Questions: 208-267-3235. Contact: cschnep@uidaho.edu

2020 Soil Health Symposium: 8:30 a.m.-4:30 p.m. Four Rivers Cul-

tural Center, 676 SW Fifth Ave., Ontario, Ore. Payette Soil and Water Conservation District presents the 11th annual Soil Health Symposium. The event features local producer panels, scientists and other agriculture specialists, along with guest speaker David Johnson, a researcher who will speak about restoring soil fertility and reducing carbon dioxide in the atmosphere with soil carbon storage, through understanding soil microbial communities. For more information and to register visit: payetteswcd.org

TUESDAY, FEB. 18

26th Annual Larry Branan Idaho Ag Summit: 7:10 a.m., Red Lion Downtowner, 1800 W. Fairview Ave., Boise. The 26th Annual Larry Branan Idaho Ag Summit will kick off on Feb. 17 at Boise Centre East with the All Idaho Strolling Supper with Idaho legislators. Feb. 18 at the Red Lion Downtowner features a full agenda of speakers and award presentations for those who have contributed greatly to Idaho agriculture. The keynote speaker is Todd Van Hoose, president and CEO of the Farm Credit Council. Website: www.idahoagsummit.org

WEDNESDAY, FEB. 19

SEDCOR Ag Breakfast — Marion County: 7:30-10 a.m. Mt. Angel Festhalle, 500 Wilco Highway NE, Mount Angel, Ore. SEDCOR's yearly Ag Breakfast is an opportunity for everyone in ag to hear from leaders in industry and government what's working, what needs work, and what the future holds. Topics include upcoming trends for growers and a hemp reality check. Free for anyone in ag in Marion, Polk and Yamhill counties. Contact: Jenni Kistler, 503-588-6225, jkistler@sedcor.com Website: <https://bit.ly/2NMLbR6>

Tariff System and Schedule B Trade Workshop: 9 a.m.-4 p.m., Food Innovation Center, 1207 NW Naito Parkway, Portland, Ore. Understand how to use the Harmonized Tariff System for imports and the Schedule B listing for exports for your business and in determining accurate product classifications. Contact: Theresa Yoshioka, International Trade Manager with the Oregon Department of Agriculture, tyoshioka@oda.state.or.us, 503-872-6626

WEDNESDAY-SATURDAY, FEB. 19-22

82nd Oregon Logging Conference: 7 a.m., Lane County Fairgrounds and Convention Center, 796 W 13th Ave., Eugene. View the latest technology in logging and construction equipment on display inside and outside at the Lane County Fairgrounds. Participate in hands-on training seminars and earn as many as 11 professional logger credits and 8 SAF-CFE credits. Network and socialize with forestry professionals from around the world. [## CALENDAR](mailto:info@oregonloggingconfer-</p>
</div>
<div data-bbox=)

ence.com, 541-686-9191.

THURSDAY, FEB. 20

Idaho Hay and Forage Conference: Canyon Crest Event Center, 330 Canyon Crest Drive, Twin Falls, Idaho. The association's annual conference and trade show will be in a new venue this year in Twin Falls. Contact: 208-888-0988, www.idahohay.com

Incoterms 2020 Trade Workshop:

12:30-4:30 p.m. One World Trade Center, 121 SW Salmon St., Portland, Ore. Do you know how the new changes in Incoterms will impact your business? These terms define responsibilities between buyer and seller in terms of risk, obligation, and cost. You will need to understand these terms when quoting a price to an international customer. Information: Theresa Yoshioka, International Trade Manager with the Oregon Department of Agriculture, tyoshioka@oda.state.or.us, 503-872-6626.

THURSDAY-FRIDAY, FEB. 20-21

Family Farm Alliance Conference: Eldorado Resort Casino, 345 N Virginia St., Reno, Nev. This year's agenda will include members of the Trump administration's "Water Sub-cabinet," ways to use technology and innovation in water management, Western litigation updates, a Reclamation Roundtable and look at key congressional water committees. Online: <http://familyfarmallianceconference.com/>

FRIDAY, FEB. 21

PNWCTA Christmas Tree Short Course: 8:30 a.m.-4 p.m., Holiday Inn Portland South, 25425 SW 95th Ave., Wilsonville, Ore. Experts will discuss new growing and harvesting methods, research, pesticide and safety information, business practices and tax implications for the industry. This program offers attendees the opportunity to earn pesticide re-certification credits with ODA and WSDA. Angie Smith, smith@pacwestcom.com, 503-364-2942. \$60 for members, \$80 non-members. <http://www.pnwcta.org/news-events/events/short-course/>

SATURDAY, FEB. 22

Oregon State University Small Farms Conference: 7:30 a.m. LaSells Stewart Center, 875 SW 26th St., Corvallis, Ore. A whole day of learning about small-scale agriculture. Among the speakers will be Andrew Mefferd, editor of Growing for Market magazine, and Katherine Deumling, founder of Cook with What You Have, a website that helps CSA customers learn how to prepare the bounty of vegetables. Cost: \$60 before Jan. 20, \$85 afterward. Website: <https://bit.ly/2PB-Jd6d> Contact: 541-766-3556

WEDNESDAY, FEB. 26

Succession Planning Course: 10 a.m.-3 p.m. Gooding County UI Extension Office, 201 Lucy Lane, Gooding, Idaho. A four-class course on succession planning will be

offered at the Gooding County, Idaho, University of Idaho extension office. The classes will help farmers and ranchers identify a successor, develop transfer strategies and determine the next step in the process. The classes are set for 10 a.m. to 3 p.m. on Feb. 26 and March 4, 11 and 18. Cost is \$100 per farm or ranch for the four-day course. Lunch and materials are included. The registration deadline is Feb. 21. To register or for more information, call (208) 934-4417. Website: <http://uidaho.edu/gooding>

THURSDAY, FEB. 27

SEDCOR Ag Breakfast — Polk and Yamhill Counties: 7:30-10 a.m. Chemeketa Event Services at Eola, 215 Doaks Ferry Road NW, Salem, Ore. SEDCOR's yearly Ag Breakfast is an opportunity for everyone in ag to hear from leaders in industry and government what's working, what needs work, what happening now, and what the future holds. Topics include upcoming trends for growers and a hemp reality check. Free for anyone in ag in Marion, Polk and Yamhill counties. Contact: Jenni Kistler, 503-588-6225, jkistler@sedcor.com Website: <https://bit.ly/2RjmHKL>

SATURDAY, MARCH 7

Pollinator Conference for Small Farms: 8:15 a.m.-4:30 p.m. Linn County Fair and Expo Center, 3700 Knox Butte Road E, Albany, Ore. Featured topics will be bees, plants and pesticides. Website: <http://linnmastergardeners.com> Contact: 541-967-3871, elizabeth.records@oregonstate.edu

THURSDAY-SUNDAY, MARCH 19-22

Oregon FFA State Convention: Deschutes County Fair and Expo Center, 3800 Southwest Airport Way, Redmond, Ore. Oregon's FFA members will meet and compete, displaying their knowledge of agriculture. <https://oregonffa.com/>

FRIDAY-SUNDAY, MARCH 20-22

Northwest Horse Fair and Expo 2020: 10 a.m.-9 p.m., Linn County Fair and Expo Center, 3700 Knox Butte Rd E, Albany, Ore. Clinics and workshops, exciting equine entertainment, tons of trade show shopping and a chance to interact with horses up close and personal are available for one low admission price. Lisa Pitts, jjcloe@equinepromotions.net, (765) 655-2107. <http://equinepromotions.net/northwest-horse-fair/>

WEDNESDAY-THURSDAY, MARCH 25-26

California Dairy Sustainability Summit: 9 a.m.-4 p.m. Cal Expo Center, Sacramento, Calif. The summit will explore new ways for dairy farmers to promote environmental sustainability, develop new business opportunities, improve operational efficiencies, reduce emissions and conserve water, set high stan-

dards for animal health and reduce on-farm costs. Website: <http://cadairysummit.com>

THURSDAY-SUNDAY, APRIL 16-19

Shepherd's Extravaganza: All day, Spring Fair, Washington State Fairgrounds, 110 9th Ave. SW, Puyallup, Wash. There will be top quality fleeces and sheep for sale, demonstrations, classes, fiber vendors, and sale of used equipment. Contact: Lin Schwider, 425-432-3455. Email: lin@shepherds-extravaganza

THURSDAY-SUNDAY, APRIL 23-26

California FFA State Convention: Anaheim Convention Center, 800 W Katella Ave., Anaheim, Calif. California's FFA members will meet and compete and demonstrate their knowledge of agriculture. Website: <http://www.calaged.org/stateconvention>

SATURDAY-SUNDAY, APRIL 25-26

Oregon Ag Fest: 8:30 a.m. Saturday, 10 a.m. Sunday, Oregon State Fair & Exposition Center, 2330 17th St. NE, Salem, Ore. A family-oriented weekend full of fun-filled activities that will help children — and their parents — learn about Oregon agriculture. Online: <http://oragfest.com/>

THURSDAY-SATURDAY, MAY 14-16

Washington FFA State Convention: Washington State University, Pullman. Washington FFA members will meet and compete, displaying their knowledge of agriculture. Website: <http://www.washingtonffa.org>

MONDAY-TUESDAY, JUNE 22-23

Idaho Cattle Association Summer Roundup: Burley Convention Center, Burley, Idaho. The annual summer conference includes presentations on topics of interest to cattle producers, as well as social events and a golf tournament. Agenda to be announced. Website: <http://www.idahocattle.org>

TUESDAY-FRIDAY, JUNE 23-26

Agriculture Transportation Coalition Annual Meeting: Greater Tacoma Convention Center, 1320 Broadway, Tacoma, Wash. This is the largest gathering of agriculture and forest products transportation professionals in the U.S. Website: www.agtrans.org

FRIDAY-SATURDAY, SEPT. 25-26

Pacific Northwest Christmas Tree Association Trade Show: Sheraton Portland Airport Hotel, 8235 NE Airport Way, Portland, Ore. This is the annual meeting and trade show of the Pacific Northwest Christmas Tree Association. Contact: <http://www.pnwcta.org>



Capital Press
EMPOWERING PRODUCERS OF FOOD & FIBER
Established 1928

Capital Press Managers

Joe Beach Editor & Publisher
Kevin Blodgett Advertising Director
Carl Sampson Managing Editor
Jessica Boone Production Manager
Samantha McLaren Circulation Manager

Entire contents copyright © 2020
EO Media Group
dba Capital Press

An independent newspaper
published every Friday.

Capital Press (ISSN 0740-3704) is
published weekly by EO Media Group,
2870 Broadway NE, Salem OR 97303.

Periodicals postage paid at Portland, OR,
and at additional mailing offices.

POSTMASTER: send address changes to
Capital Press, P.O. Box 2048 Salem, OR
97308-2048.

To Reach Us

Circulation 800-781-3214
Email Circulation@capitalpress.com
Main line 503-364-4431

News Staff

Idaho

Carol Ryan Dumas 208-860-3898

Boise

Brad Carlson 208-914-8264

Western Washington

Don Jenkins 360-722-6975

Eastern Washington

Matthew Weaver 509-688-9923

Oregon

George Plaven 406-560-1655

Mateusz Perkowski 800-882-6789

Sierra Dawn McClain 503-506-8011

Graphic artist

Alan Kenaga 800-882-6789

Designer

Randy Wriughthouse 800-882-6789

To Place Classified Ads

Telephone (toll free) 800-882-6789
Online CapitalPress.com/classifieds

Subscriptions

Mail rates paid in advance
Easy Pay U.S. \$4 /month
(direct withdrawal from bank
or credit card account)

1 year U.S. \$55

2 years U.S. \$100

1 year Canada \$275

1 year other countries call for quote

1 year Internet only \$49.99

1 year 4-H, FFA students/teachers \$30

9 months 4-H, FFA students/teachers \$25

Visa and Mastercard accepted

To get information published

Mailing address:

Capital Press
P.O. Box 2048
Salem, OR 97308-2048

News: Contact the main office
or news staff member closest to you,
send the information to
newsroom@capitalpress.com
or mail it to "Newsroom," c/o Capital Press.
Include a contact telephone number.

Letters to the Editor: Send your
comments on agriculture-related public
issues to opinions@capitalpress.com, or
mail your letter to "Opinion," c/o Capital
Press. Letters should be limited to
300 words. Deadline: Noon Monday.

Capital Press ag media

CapitalPress.com
FarmSeller.com
MarketPlace.capitalpress.com
facebook.com/CapitalPress
facebook.com/FarmSeller
twitter.com/CapitalPress
youtube.com/CapitalPressvideo

Index

Dairy 13
Markets 16
Opinion 6
Water 8-10

Correction policy

Accuracy is important to Capital Press
staff and to our readers.

If you see a misstatement, omission or
factual error in a headline, story or photo
caption, please call the Capital Press news
department at 503-364-4431, or send
email to newsroom@capitalpress.com.

We want to publish corrections
to set the record straight.