CAST Issue Paper 70

Ground and Aerial Robots for Agricultural Production: Opportunities and Challenges

Released November 16, 2020

Chair: Santosh Pitla, University of Nebraska-Lincoln; 21-member task force

Release/Rollout

The CAST Issue Paper, “Ground and Aerial Robots for Agricultural Production: Opportunities and Challenges,” was released on November 16, 2020. On November 17, Task force chair, Dr. Santosh Pitla presented highlights of the paper followed by a Q&A session with a panel of five authors—Dennis Buckmaster, Tami Brown-Brandl, Todd Janzen, Michael Sama, and Scott Shearer. There were 604 registrants for the webinar and 319 unique viewers attending on Zoom.

- Webinar Video – 376 views as of December 13, 2022
- Link to commentary, Ag quickCAST, student study guide, webinar video, and Q&A.

In-kind Contributions: 270 volunteer hours; $19,980 monetary value

Press Release (results two weeks after release)

- Distributed through Constant Contact, PRWeb, and the CAST website.
- Press release went to 10,169 e-contacts resulting in 4,723 opens
- 105 views of the press release from the CAST website as of May 16, 2021.
- The press release through PRWeb resulted in 3,058 views and reached 975 targeted influencers (journalists/bloggers).

Follow-On Activities

American Society of Agronomy/Soil Science Society of America, 1 CEU for professional development was offered to certified crop advisors for watching the webinar.

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National Association of Agricultural Educators, Communities of Practice – blog posts in “online/distance learning resources’ including a summary of the publication, Ag quickCAST, and student study guide attachment (82 views)

**Paper Distribution**

Paper Distribution (print and online access from CAST website) 6 months after release –2,529

**Indirect Paper Distribution**

AgriTech Tomorrow, White Papers  
https://www.agritechtomorrow.com/whitepapers.php

Ministry of Science and Technology (Taiwan)  
https://outlook.stpi.narl.org.tw

University of Nebraska-Lincoln, DigitalCommons@University of Nebraska  
https://digitalcommons.unl.edu/biosysengfacpub/727/  
https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1732&context=biosysengfacpub

ResearchGate,  
https://www.researchgate.net/publication/346023818_Ground_and_Aerial_Robots_for_Agricultural_Production Opportunities_and_Challenges

Semantic Scholar,  

**Articles and Web Mentions**


https://www.farmweeknow.com/eedition/page-a11/page_cc99931d-5bda-5a82-b97e-3651647903a0.html  
https://www.farmweeknow.com/profitability/can-robots-solve-agricultural-workforce-availability-issues/article_3bb62b2e-29d0-11eb-940d-23c0f7817d49.html

Wallaces Farmer, *How soon will robotic agriculture take root?* January 21, 2021,  
https://www.farmprogress.com/technology/how-soon-will-robotic-agriculture-take-root

GrainNet, *Robots in Agriculture: Council for Agricultural Science and Technology Outlines Opportunities, Challenges*, November 20, 2020  

GPS Daily, *CAST releases paper on “Ground and Aerial Robots for Agricultural Production: Opportunities and Challenges”*, November 17, 2020  
https://www.gpsdaily.com/reports/CAST_releases_paper_on_Ground_and_Aerial_Robots_for_Agricultural_Production_Opportunities_and_Challenges_999.html

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**Texas Farm Bureau, Texas Agriculture Daily**, *Challenges, opportunities to adopting robots in ag*, Jennifer Dorsett, December 9, 2020 (with link to paper), [https://texasfarmbureau.org/challenges-opportunities-to-adopting-robots-in-agriculture/](https://texasfarmbureau.org/challenges-opportunities-to-adopting-robots-in-agriculture/)


**Citations**

Commentary *Opportunities for Robotic Systems and Automation in Cotton Production*, *AgriEngineering* (MDPI), May 28, 2021, [file:///C:/Users/Student2/Downloads/agriengineering-03-00023-v2.pdf](file:///C:/Users/Student2/Downloads/agriengineering-03-00023-v2.pdf)


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Effect of Different Planting Techniques and Weeding on Machine Field Capacity and Yield of a Mixed Cropping Small-Holder Farm, Engineering in Agriculture, Environment and Food, Volume 14, No. 1, 2021 https://www.jstage.jst.go.jp/article/eaef/14/1/14_13/_article/-char/en

Social Media

Twitter—
@JanzenLaw, November 16, 2020
https://twitter.com/JanzenLaw/status/1328408607310958593
1 retweet, 3 likes

@AgriTechTmrw, November 16, 2020
https://twitter.com/AgriTechTmrw/status/1328383140524666881
1 like

@GregDahl8, November 17, 2020
https://twitter.com/GregDahl8/status/1328782589608529922
1 retweet, 3 likes

@FutureOfAg, November 17, 2020
https://twitter.com/FutureOfAg/status/1328623734467465216

@MichaelKirkby, November 17, 2020
https://twitter.com/MichaelKirkby/status/1328807910558867458

@CASTagScience, November 19, 2020
https://twitter.com/CASTagScience/status/1329436811584827393
3 retweets, 3 likes

@UNL_IANR, December 8, 2020
https://twitter.com/UNL_IANR/status/1336325374423126016
1 retweet, 4 likes

@Syed_Meesam_Ali, December 9, 2020
https://twitter.com/Syed_Meesam_Ali/status/1336868098020937734

@CASTagScience, January 27, 2021
https://twitter.com/CASTagScience/status/1354497026071928836
2 retweets, 4 likes

@CASTagScience, April 8, 2021
https://twitter.com/CASTagScience/status/1380194594982408200
3 retweets, 4 likes

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