Dhahi Al-Shammari

Education

PhD in precision agriculture
M.Sc. of science in agriculture

Skills

Remote and proximal sensing 8+ yrs.

R programming 6+ yrs.

Data science 6+ yrs.

Google Earth Engine 5+ yrs.

Crop yield modelling 5+ yrs.

English levels

Contact

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Biography

Experienced and highly proficient researcher with expertise in crop yield modeling, crop type mapping, and plant disease analysis. My work integrates advanced remote sensing techniques, geospatial analysis, and machine/deep learning methodologies to address critical challenges in agriculture. I am proficient in using Google Earth Engine and possess advanced programming skills in R, contributing to innovative research outcomes. Dedicated to advancing scientific knowledge and applying state-of-the-art technologies to improve agricultural practices, I am seeking opportunities to contribute to groundbreaking research while expanding my expertise and collaborating with leading experts in the field.

Work experience

Postdoctoral Researcher - The University of Sydney (2022 - Present)
Leading a project funded by the Grains Research and Development Corporation (**GRDC UOS2204-005RTX**).

Contributing to projects led by the University of Sydney team, managed by Prof. Thomas F.A. Bishop and Dr Patrick Filippi.

Demonstrator - The University of Sydney (2019 - 2019)
Introduction to statistical methods.

Demonstrator - The University of Sydney (2021 - 2021)
GIS, Remote Sensing and Land Management.

Teaching experience

- ENVX4001 GIS, Remote Sensing and Land Management
- ENVX1002 Introduction to Statistical Methods

Awards

- CSIRO/Data61 Postgraduate Research Scholarship in Digital Agriculture
- CSIRO/Data61 Postgraduate Research Stipend and Supplementary Scholarship in Digital Agriculture

Thesis

Remote sensing applications for crop type mapping and crop yield prediction for digital agriculture

Journal articles

1. Al-Shammari D, Whelan BM, Wang C, Bramley RG, Bishop TF. 2025. Assessment of red-edge based vegetation indices for crop yield prediction at the field scale across large regions in Australia. European Journal of Agronomy. 164:127479.

2. Al-Shammari D, Chen Y, Wimalathunge NS, Wang C, Han SY, Bishop TF. 2024. Incorporation of mechanistic model outputs as features for data-driven models for yield prediction: a case study on wheat and chickpea. Precision Agriculture. 25(5):2531-2553.

3. Al-Shammari D, Fuentes I, Whelan BM, Wang C, Filippi P, Bishop TF. 2024. Combining Sentinel 1, Sentinel 2 and MODIS data for major winter crop type classification over the Murray Darling Basin in Australia. Remote Sensing Applications: Society and Environment. 34:101200.

4. Singh K, Fuentes I, Al-Shammari D, Fidelis C, Butubu J, Yinil D, Sharififar A, Minasny B, Guest DI, Field DJ. 2023. E-Agriculture Planning Tool for Supporting Smallholder Cocoa Intensification Using Remotely Sensed Data. Remote Sensing. 15(14):3492.

5. Al-Shammari D, Whelan BM, Wang C, Bramley RG, Fajardo M, Bishop TF. 2021. Impact of spatial resolution on the quality of crop yield predictions for site-specific crop management. Agricultural and Forest Meteorology.
310:108622.

6. Al-Nasrawi AK, Fuentes I, Al-Shammari D. 2021. Changes in Mesopotamian wetlands: investigations using diverse remote sensing datasets. Wetlands. 41(7):94.

7. Marang IJ, Filippi P, Weaver TB, Evans BJ, Whelan BM, Bishop TF, Murad MO, Al-Shammari D, Roth G. 2021. Machine learning optimised hyperspectral remote sensing retrieves cotton nitrogen status. Remote Sensing.
13(8):1428.

8. Al-Shammari D, Fuentes I, Whelan BM, Filippi P, Bishop TFA. 2020. Mapping of Cotton Fields Within-Season Using Phenology-Based Metrics Derived from a Time Series of Landsat Imagery. remote sensing. 12(18):3038.

9. Choudhury S, Al-Shammari D, Hu H, Meinke H, Westmore G, Birchall C, Larkin P, Zhou M. 2018. A screening method to detect BYDV-PAV resistance in cereals under glasshouse conditions. Plant Pathology. 67(9):1987-1996.

Conference papers

1. Al-Shammari D, Filippi P, Poole S, Bishop TF. 2024. Identifying within-field yield gaps with boundary-line analysis. The 21st Australian Agronomy Conference.

2. Al-Shammari D, McPherson T, Filippi P, Bishop TF. 2024. Do pulse crops present a greater opportunity for site-specific crop-management than cereals? A national study. 16th International Conference on Precision Agriculture.

3. Filippi P, Al-Shammari D, Thomas M M, Bishop TFA. 2024. Pulse vs. cereal crop variability: A comprehensive analysis with precision agriculture data across Australia. The 21st Australian Agronomy Conference.

4. Poole S, Bishop T, Al-Shammari D, Filippi P. 2024. Mapping within-field drivers of crop production in space and time using interpretive machine learning.

5. Al-Shammari D, Chen Y, Wimalathunge N, Wang C, Bishop T. 2023. Integration of mechanistic model outputs as inputs into data-driven models for yield prediction: a case study on canola. Precision agriculture'23.

6. Bishop T, Al-Shammari D, Coelli K, Filippi P, Wimalathunge N, Whelan B. 2023. Unleashing precision agriculture data for improved soil carbon accounting. Precision agriculture'23.

7. Al-Shammari D, F.A. Bishop T, Wang C, M. Whelan B, and G.V. Bramley R. 2022. A comparison between machine learning and simple mechanistic-type models for yield prediction in site-specific crop yield predictions. 20th Australian Agronomy Conference 2022, Australia: Australian Society of Agronomy, Toowoomba Queensland.

8. Al-Shammari D, Bishop TFA, Fuentes I, Filippi P. 2019. Mapping cotton fields using phenology-based metrics derived from a time series of Landsat imagery. 19th Australian Agronomy Conference 2019, Australia: Australian Society of Agronomy.

Book chapters

1. Al-Shammari D, Filippi P, Moloney JP, Wimalathunge NS, Whelan BM, Bishop TFA. 2020. Decision support systems (DSS) for better fertiliser management. Improving data management and decision support systems in agriculture. Burleigh Dodds; p. 159-183.