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**BLAKE MUNSHELL**

Faculty Specialist, University of Maryland

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(202) 669-7677

18901 New Hampshire Avenue, Brinklow, Maryland, USA 20862

Blake Munshell is a Faculty Specialist with NASA Harvest and the University of Maryland Department of Geographical Sciences, working with the development team for project support, data analysis, and application development. As a FS, he has worked on the GEOGLAM Crop Monitor for NASA Harvest, Argentina, Togo, and Malawi field classifications, the COVID-19 Dashboard for NASA Harvest, NASA Harvest Portal Data Catalog, and NASA Harvest Food Supply Chain Project. He also was a project lead on the Agricultural Estimates and Agroindustrial Educational Establishments project with the Buenos Aires Grains Exchange, working to teach rural students modern agricultural monitoring techniques. He has worked with universities, corporations, government agencies, and NGOs to complete projects improving food security, understanding market impacts, and developing technology. His complete projects cover topics such as data validation and leveraging, crop classifications, and coding and machine learning. He has also worked as a TA in introduction remote sensing classes, and previously was an intern and then a Graduate Research Assistant before his current role as a Faculty Specialist.

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**Academic History**

M.S., Geospatial Information Sciences, University of Maryland Present

B.S., Environmental Science and Policy, University of Maryland 2020

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**Professional Experience**

Faculty Specialist, Department of Geographical Sciences, UMD 2021 – Present

* Collected, curated, and processed more than 125 datasets for use in the NASA Harvest Food Supply Chain Project
* Processed and created more than 38,000 field boundary and crop type polygons from ground truth points in Argentina
* Created survey and supported field campaign in Malawi using citizen science, which will continue with a second campaign in January 2022 in Malawi and Namibia
* Lead project support and application development for an educational program in rural Argentina, teaching students to collect and process field observations
* Presented outcomes of the educational program at American Geophysical Union Fall Meeting in New Orleans, Louisiana
* Classified crop type maps using AI and machine learning in Argentina, Mali, Togo, China, and Malawi

Graduate Research Assistant, Department of Geographical Sciences, UMD 2020 – 2021

* Assisted in the development of the NASA Harvest COVID-19 Dashboard
* Assisted in the creation of the NASA Harvest Data Catalog

Teaching Assistant, Department of Geographical Sciences, UMD 2020 – 2021

* Taught the lab section of an introductory course for Remote Sensing

Intern, Department of Geographical Sciences, UMD 2019 – 2020

* Assessed accuracy of the GEOGLAM Crop Monitor for NASA Harvest to improve agricultural monitoring

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**Qualities**

* Have spent the entire time with Harvest working in diverse teams that requires speaking in multiple languages, across many countries and regions
* Able to adapt to issues with software to see project continues
* Constant contact with partners to ensure that project needs are met
* Experienced with guiding interns to assist in efficiency of project progression

**Skills**

* Proficient in Python, JavaScript, SQL, HTML, Excel and competent in R
* Experienced in form creation using XLSForms, mostly in ESRI Survey123
* Fluent in English, Competent in Spanish, elementary knowledge of German, and currently studying Mandarin
* Lab and field experience
* Have been an educator across multiple mediums

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**Selected Publications**

Kerner, H. R., Tseng, G., Becker-Reshef, I., Barker, B., Munshell, B., Paliyam, M., Hosseini, M. (2020). "Rapid Response Crop Maps in Data Sparse Regions." In *Proceedings of the ACM SIGKDD Conference on Data Mining and Knowledge Discovery (KDD) Workshops*.

**Selected Presentations**

Munshell, B.; Copati, E.; Puricelli, E.; Kerner, H.; Humber, M.; Lopez, M.; Becker-Reshef, I., “An Educational Program for Engaging Rural Students for Agricultural in situ Data Collection,” Presentation, American Geophysical Union 2021 Fall Meeting, New Orleans, Louisiana, December 16, 2021.

Munshell, B.; Connell, S.; Foster, B.; Fuentes, R.; Maurer, E.; Neve, S.; Turyahikayo, S.; Wills, J., “Net Zero Carbon Emissions for Maryland,” Presentation, University of Maryland College of Agriculture and Natural Resources and Chesapeake Climate Action Network, College Park, Maryland, November 19, 2019.

Humber, M.; Puricelli, E.; Sanchez, A.; Munshell, B.; Justice, C.J.; Mitkish, M.; O’Bannon, J.; Toren, K.; Becker-Reshef, I., “NASA Harvest Data Platforms for Understanding Agricultural Supply Chains in the COVID-19 World,” Presentation, American Geophysical Union 2021 Fall Meeting, New Orleans, Louisiana, December 13, 2021.

Humber, M.;Puricelli, E.; Sanchez, A.; Keniston, J.; Justice, C.J.; Munshell, B.; O’Bannon, J.; Becker-Reshef, I.,“NASA Harvest’s COVID-19 Dashboard and Data,” Presentation, Downstream Effects of COVID-19: Food Security, World Wide Human Geography Data (WWHGD) Working Group Webinar, Online, March 25, 2021.

Humber, M.;Kerner, H.; Munshell, B.; Becker-Reshef, I.; et al.,“Mapping National-Scale Agricultural Practices,” Presentation, GEO-AWS EO Cloud Credits Programme Webinar, Online, March 22, 2021.