

Mingda Wu

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EDUCATION

University of Wisconsin-Madison Madison, WI, USA	Sep 2024- Present
Master of Science in <i>Biological Systems Engineering</i>	
Capital Normal University Beijing, China	Sep 2023-Jun 2024
Bachelor of Science in <i>Geographic Information Sciences</i>	Sep 2020-Jun 2021
GPA: 4.34/5 (93.4/100), Major rank 1	
Northern Illinois University DeKalb, IL, USA	Aug 2021-May 2023
Bachelor of Science in <i>Geography</i> (Transfer)	
GPA: 3.99/4, Dean's List for all semesters, Full University Honors, Summa Cum Laude, GIS Certificate	

RESEARCH AND ACADEMIC EXPERIENCES

Phenology-Guided Corn Yield Estimation	Sep 2024 - Present
<i>Digital Agricultural Lab</i> , University of Wisconsin-Madison	
Master's research (advised by Dr. Zhang)	
<ul style="list-style-type: none">Estimate corn yield at county level using multi-stream spatiotemporal DL modelsLeverage phenology information to assist model learningApply Transformer-based architecture to improve performanceIntegrate KAN heads to enhance interpretabilityConference presentation, Journal publication (upcoming)	
Bitemporal Residual Attention Network for Wildfire Burn Severity Mapping	Jan 2023 - Sep 2024
<i>Spatial Computing and Data Mining Lab</i> , University of Wisconsin-Madison	
Undergraduate research (advised by Dr. Huang)	
<ul style="list-style-type: none">Assess wildfire severity at pixel level with custom attention U-Net modelsEmploy wildfire-sensitive remote sensing index to aid model convergenceJournal publications and conference presentations	
Multiclass Wildfire Burnt-Area Segmentation	Jan 2023 - May 2024
<i>Department of Earth, Atmosphere, and Environment</i> , Northern Illinois University	
Undergraduate research (advised by Dr. Luo and Dr. Haberlie)	
<ul style="list-style-type: none">Detect wildfire burn areas using basic segmentation modelsCapstone publication and conference presentations	

Journal Paper Review	2025
<ul style="list-style-type: none">International Journal of Applied Earth Observation and Geoinformation (3 reviews)Science of Remote Sensing (2 reviews)Advances in Space Research (1 review)Ecological Informatics (1 review)	

PUBLICATIONS

- Fang, J., **Wu, M.**, Zhang, Z., Luo, W. (2025). Leveraging AlphaEarth Foundations Embeddings for High-Accuracy County-Scale Corn and Soybean Yield Estimation (TechRxiv preprint)
<https://www.techrxiv.org/users/775198/articles/1334677-leveraging-alphaearth-foundations-embeddings-for-high-accuracy-county-scale-corn-and-soybean-yield-estimation>
- Wu, M.**, Huang, Q., Sui, T., Bo, P & Yu, M. (2024). A Remote Sensing Spectral Index Guided Bitemporal Residual Attention Network for Wildfire Burn Severity Mapping. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*. <https://ieeexplore.ieee.org/abstract/document/10680302>
- Sui, T., Huang, Q., **Wu, M.**, Wu, M., & Zhang, Z. (2024). BiAU-Net: Wildfire Burnt Area Detection Based on Bi-temporal Sentinel-2 Images and U-Net with Attention Mechanism. *International Journal of Applied*

Earth Observation and Geoinformation.

<https://www.sciencedirect.com/science/article/pii/S1569843224003881>

- **Wu, M.**, Huang, Q., Sui, T., & Wu, M. (2023). *Pixel-wise Wildfire Burn Severity Classification with Bi-temporal Sentinel-2 Data and Deep Learning*. 2023 6th International Conference on Big Data Technologies (ICBDT 2023). <https://doi.org/10.1145/3627377.3627433> (**Excellent Presentation Award**)
- **Wu, M.** (2023). Pixel-Wise Machine Learning and Deep Learning Methods Implementation on Multi-Class Wildfire Mapping. *Honors Capstones*, 1464. <https://huskiecommons.lib.niu.edu/studentengagement-honorscapstones/1464> (**Third Prize poster presentation**)

PRESENTATIONS

- **Wu, M.**, Wang, X., and Zhang, Z., Corn Yield Prediction Using Phenology-Informed Remote Sensing Data and Deep Learning Methods. 2025 American Geophysical Union Fall Meeting, New Orleans, LA. December 15–19, 2025. (Accepted)
- **Wu, M.**, Sui, T., Huang, Q., & Wu, M. (2024). *Bi-RAUnet: A Multiclass Wildfire Burnt Area Assessment Framework using Deep Learning and Sentinel-2 Imagery* [Paper presentation]. Association of American Geographers (AAG) 2024, Honolulu, Hawaii, United States of America. <https://aag.secure-platform.com/aag2024/solicitations/57/sessiongallery/7886/application/31267> (**Paper Competition Winner**)
- Huang, Q., **Wu, M.**, & Sui, T. (2023). *Empowering Wildfire Damage Assessment with Bi-temporal Sentinel-2 Data and Deep Learning*. 2023 American Geophysical Union (AGU) Fall Meeting, San Francisco, CA, United States of America. (Invited)
- **Wu, M.** (2023). *Pixel-Wise Machine Learning and Deep Learning Methods Implementation on Multi-Class Wildfire Mapping* [Poster presentation]. Illinois GIS Association (ILGISA) - the Geographic Society of Chicago (GSC) Student Poster Symposium, Chicago, IL, USA. (**First Prize in undergraduate group**)
- Sui, T., **Wu, M.**, Wu, M., & Huang, Q. (2023). *Empowering Urban Wildfire Burnt Area Detection with Deep Learning*. Global Smart Cities Summit Cum the 3rd International Conference on Urban Informatics (GSCS & ICUI 2023) Conference, Hong Kong, China.

WORK EXPERIENCES

Teaching Assistant Madison, WI, USA <i>SuccessWorks</i> , University of Wisconsin-Madison	Aug 2025-Present
<ul style="list-style-type: none">• Inter-LS 215: Communicating About Your Careers• Comm-B writing course for undergraduates• Facilitating discussion and writing conference about career exploration	
Corn Breeding Field Assistant Madison, WI, USA <i>Department of Bacteriology</i> , University of Wisconsin-Madison	Jun 2025-Aug 2025
<ul style="list-style-type: none">• Assisting field sample collection• Hands-on experience in corn growing stages• Contribute to key research stages of the agricultural area, has been reported in news articles	
Teaching Assistant Madison, WI, USA <i>Department of Geography</i> , University of Wisconsin-Madison	Jan 2025-May 2025
<ul style="list-style-type: none">• Geog 573: Advanced Geocomputing and Geospatial Big Data Analysis• Design materials and deliver lectures about Python and GEE programming in GIS topics• 4.5/5 by student evaluation	
Senior News Photographer DeKalb, IL, USA <i>Northern Star</i> , Northern Illinois University	Aug 2021-May 2023
Scanning Technician DeKalb, IL, USA <i>Founders Memorial Library</i> , Northern Illinois University	Jan 2022-May 2022
Photographer Beijing, China <i>Youth Radio & College of Resource Environment and Tourism</i> , Capital Normal University	Sep 2020-Jun 2021

HONORS AND AWARDS

Conference Presentation Funds, University of Wisconsin-Madison	Sep, 2025
Outstanding Graduates, Capital Normal University	May 2024

First-Class Scholarship, Capital Normal University	Nov 2023
Academic Merit Scholarship, Capital Normal University	Nov 2023
Excellent Presentation Award, 2023 6 th International Conference on Big Data Technologies	Sep 2023
Summa Cum Laude, Northern Illinois University	May 2023
Dean's List nomination for four semesters, Northern Illinois University	May 2023
GIS Certificate, Department of Earth, Atmosphere and Environment, Northern Illinois University	May 2023
Richard E. Dahlberg Scholarship, Northern Illinois University	May 2023
First Prize of the undergraduate group, ILGISA Poster Symposium	May 2023
Full University Honors, Northern Illinois University	Apr 2023
Third Prize of the environment category, NIU CURE Poster Symposium	Apr 2023
Second Prize of general news photo, Illinois College Press Association	Feb 2023
Third-Class Scholarship, Capital Normal University	May 2022
Outstanding Student Cadre Award, Capital Normal University	May 2021
Third Prize in camera group, Second Annual Fall Photo Contest, Capital Normal University	Nov 2020
Fourth Prize in 2020 Fall Photo Contest, Capital Normal University	Oct 2020

EXTRACURRICULAR ACTIVITIES

Volunteer of "Week of Welcome 2022" DeKalb, IL, USA	Aug 2022
Responsible for organizing the welcome event and arranging the welcome picnic.	
Volunteer of "Give DeKalb 2022" DeKalb, IL, USA	Mar 2022
Participated in the annual fund-raising event of DeKalb County.	