Mingda Wu

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EDUCATION

University of Wisconsin-Madison | Madison, WI, USA — Sep 2024-**Present**
Master of Science in *Biological Systems Engineering*

Capital Normal University | Beijing, China — Sep 2023-Jun 2024
Bachelor of Science in *Geographic Information Science* — Sep 2020-Jun 2021
GPA: 4.34/5 (93.4/100), Major Top 1
Northern Illinois University | DeKalb, IL, USA — Aug 2021-May 2023
Bachelor of Science in *Geography* (Transfer, Hon)
GPA: 3.99/4, Dean's List for 4 semesters, Full University Honors, Summa Cum Laude, GIS Certificate

WORK EXPERIENCES

Teaching Assistant | Madison, WI, USA — Jan 2025-May 2025
Department of Geography, University of Wisconsin-Madison — 50% appointment

Senior News Photographer | DeKalb, IL, USA — Aug 2021-May 2023
Northern Star, Northern Illinois University
Scanning Technician | DeKalb, IL, USA — Jan 2022-May 2022
Founders Memorial Library, Northern Illinois University
Photographer | Beijing, China — Sep 2020-Jun 2021
Youth Radio & College of Resource Environment and Tourism, Capital Normal University

PUBLICATIONS

- **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*.
- 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*.
- **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**., 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, United States of America. (**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.

RESEARCH EXPERIENCES

Phenology-Guided Corn Yield Estimation Sep 2024-**Present**

Digital Agricultural Lab, University of Wisconsin-Madison

Advised by Dr. Zhang

- Predict corn yield at county level using Deep Learning models
- Extract phenological stages and aggregate predictors
- Fusing SAR and optical imagery with multimodal model architecture
- Design separate blocks for time-series and spatial feature extraction

Bitemporal Residual Attention Network for Wildfire Burn Severity Mapping Jan 2023-Sep 2024

Spatial Computing and Data Mining Lab, University of Wisconsin-Madison

Advised by Dr. Huang

- Assess wildfire severity at pixel level with custom U-Net models
- Employ wildfire-sensitive remote sensing index to aid model convergence
- Apply attention and residual block to improve model performance.

Multiclass Wildfire Mapping using Machine Learning Jan 2023-May 2023

Department of Earth, Atmosphere and Environment, Northern Illinois University

Advised by Dr. Luo & Dr. Haberlie

- Apply multiclass wildfire mapping using Machine Learning algorithms

HONORS AND AWARDS

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 6th 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.