

# Mingda Wu

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## EDUCATION

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<b>Capital Normal University</b>	2020-Present
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Bachelor of Science in Geographic Information Science	Beijing, China
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- GPA: 4.34/5, Ranking: 1/20
- TOEFL iBT: 106
- Estimate Graduation Date: June 2024
- Courses: Human Geography (94/100)  
Cartography (94/100)  
Computer Applications (96/100)

<b>Northern Illinois University</b>	2021-2023
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Bachelor of Science in Geography (GIS Certificate)	DeKalb, IL, USA
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- GPA: 3.98/4
- Exchange Student
- Full University Honor
- Summa Cum Laude
- Courses: GEOG 493: Computer Program for the Geosciences (A)  
GEOG 460: Remote Sensing of the Environment (A)  
GEOG 361: Geographic Measurement Quantitative Analysis (A)

## PUBLICATION

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<b>Pixel-Wise Machine Learning and Deep Learning Methods Implementation on Multi-Class Wildfire Mapping</b>	May 2023
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**Mingda Wu**

Northern Illinois University Huskie Commons

- Supervised by Dr. Wei Luo from Northern Illinois University

## PREPRINT

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<b>Pixel-wise Wildfire Burn Severity Classification with Bi-temporal Sentinel-2 Data and Deep Learning</b>	Sep 2023
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**Mingda Wu**, Qunying Huang, Tang Sui, Meiliu Wu

ICBDT 2023 Conference Proceedings

- Supervised by Dr. Qunying Huang from University of Wisconsin-Madison

- Archived in ACM Digital Library
- Indexed by Ei Compendex and Scopus

## ABSTRACT SUBMISSION

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### **Empowering Wildfire Damage Assessment with Bi-temporal Sentinel-2 Data and Deep Learning**

Upcoming Dec 2023

Qunying Huang, **Mingda Wu**, Tang Sui, Meiliu Wu

AGU Annual Meeting 2023

San Francisco, USA

### **Empowering Urban Wildfire Burnt Area Detection with Deep Learning**

Aug 2023

Tang Sui, **Mingda Wu**, Meiliu Wu, Qunying Huang

The 3rd International Conference on Urban Informatics

Hong Kong, China

## RESEARCH EXPERIENCES

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### **Jing-Jin-Ji GeoData Center at Capital Normal University**

Independent research lab member, supervised by Dr. jinyan Tian

Sep 2023-Present

- Conducting research on super resolution with satellite data
- Focused on the *Sporobolus alterniflorus* in China mainland.

### **Spatial Computing and Data Mining Lab at University of Wisconsin-Madison**

Independent research lab member, supervised by Dr. Qunying Huang

Jan 2023-Present

- Examined the advantages of using Deep learning models to perform multiclass wildfire classification.
- Proposed a Bi-temporal U-Net model to get a better accuracy, especially for mean IoU value.
- Employed attention gates and residual blocks to enhance the model's performance on tough dataset.
- Combined automated and traditional thresholding labeling method to optimize the experience of labeling deep learning images.
- Explored band compositions of Sentinel 2 and which bands are sensitive to wildfire.

### **Department of Earth, Atmosphere and Environment at Northern Illinois University**

Senior independent research member, supervised by Dr. Wei Luo

Jan 2023-May 2023

- Used machine learning models to classify wildfire incidents.
- Applied multiple models, including Random Forest, XGBoost, and SVM.
- Employed cross validation to tune the models.
- Evaluated accuracy with various metrics, such as OA, F1-score, IoU, etc.

## AWARDS AND HONORS

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### **Excellent Presentation Award**

Sep 2023

2023 6<sup>th</sup> International Conference on Big Data Technologies

- Awarded to the No. 1 for each session.

### **Full University Honors**

May 2023

Northern Illinois University

- Completed a certain number of honors courses and participate in Honors Engaged activities.

### **Geographic Information System Certificate**

May 2023

Department of Earth, Atmosphere and Environment, Northern Illinois University

- Completed the pre-professional curriculum of geographic information technologies.

### **Richard E. Dahlberg Scholarship**

May 2023

Department of Earth, Atmosphere and Environment, Northern Illinois University

- Awarded to the No. 1 in the department.

### **First Place of the undergraduate group at ILGISA Poster Symposium**

May 2023

Illinois Geographic Information System Association

### **Third Place of the environmental category at CURE Poster Symposium**

Apr 2023

Northern Illinois University

### **Second place of general news photo for excellence in Illinois college newspaper**

Feb 2023

Illinois College Press Association

### **Major Third-Class Scholarship**

Spring 2022

Capital Normal University

## WORK EXPERIENCES

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### **Senior Photojournalist**

Aug 2021-May 2023

Northern Star, Northern Illinois University

- Photographing significant occasions, sporting events, and conducting concise interviews.

### **Scanning Technician**

Aug 2022-Dec 2022

Founders Memorial Library, Northern Illinois University

- Scanning and digitizing antiquated books to contribute to the online library.

### **Photographer**

Sep 2020-Jun 2021

Youth Radio & College of Geospatial Information Science and Technology Department of  
News, Capital Normal University

- Capturing important moments and sports events through photography.

## **VOLUNTEERING EXPERIENCES**

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**Volunteer of “Week of Welcome 2022”**

Aug 2022

- Responsible for giving out flags and guiding people the way, as well as arranging the welcome picnic.

**Volunteer of “Give DeKalb 2022”**

Mar 2022

- Participated in the annual event of DeKalb County. Responsible for making advertising board.