

## Zijun Yang

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### EDUCATION

#### University of Illinois at Urbana-Champaign School of Earth, Society, and Environment (Urbana, IL)

- **Ph.D. student**, Geography and GIScience, expected 2024
- GPA: 3.97/4.0
- Coursework: Stat Learning in Data Science, Deep Learning, Applied Parallel Programming, Spatial Statistics, Crop Growth and Management, Aerial Photo Analysis
- Research interests: time series remote sensing, spatiotemporal image fusion, machine learning/deep learning, agricultural remote sensing, and crop dynamics modeling

#### University of Michigan School for Environment and Sustainability (Ann Arbor, MI)

- **Master of Science**, Natural Resources and Environment: Environmental Informatics, April 2018
- Thesis: [\*Using Spatial Entropy of Urban Vegetation to Measure Neighborhood Stability in Shrinking Cities\*](#)
- GPA: 4.0/4.0
- Environmental Informatics Track Leader, SEAS, 2017
- Coursework: Remote Sensing of Environment, Applied Statistics I, Analysis and Modeling of Ecological Data, Environmental Spatial Data Analysis

#### Sun Yat-Sen University School of Geography and Planning (Guangzhou, China)

- **Bachelor of Science**, Geographic Information System, June 2012
- GPA: 90.4/100
- SYSU Scholarship for Outstanding Student
- Coursework: Quantitative Remote Sensing, GIS Software Engineering, Object Oriented Programming, Remote Sensing Imagery Processing, Digital Survey and Mapping

### HONORS AND AWARDS

- **Third Place Geography and GIS Poster**, 2021 SESE Research Review, University of Illinois at Urbana-Champaign, 2021
- **Supplementary Summer Block Grant**, Graduate College, University of Illinois at Urbana-Champaign, 2020
- **Student Honors Paper Competition Award (First Place)**, Remote Sensing Specialty Group, Annual Meeting of the Association of American Geographers, 2020
- **Teacher Ranked as Excellent**, Center for Teaching Excellence, University of Illinois at Urbana-Champaign, 2019
- **SYSU Scholarship for Outstanding Students**, Sun Yat-Sen University, 2014-2016
- **SYSU Outstanding Student League Member**, Sun Yat-Sen University, 2014

### PUBLICATIONS

- **Yang, Z.**, Diao, C., & Li, B. (2021). A Robust Hybrid Deep Learning Model for Spatiotemporal Image Fusion. *Remote Sensing*, 13(24), 5005.

- Diao, C., **Yang, Z.**, Gao, F., Zhang, X., & Yang, Z. (2021). Hybrid phenology matching model for robust crop phenological retrieval. *ISPRS Journal of Photogrammetry and Remote Sensing*, 181, 308-326.

## PRESENTATIONS

- **Yang, Z.** and Diao, C. A phenolgy-guided deep learning model for in-season crop mapping at the field level. *Annual Meeting of the Association of American Geographers (AAG)*, Virtual Meeting, Feb. 25-Mar. 1, 2022.
- Diao, C. and **Yang, Z.** Towards remote sensing modeling framework for crop phenological characterization. *Annual Meeting of the Association of American Geographers (AAG)*, Virtual Meeting, Feb. 25-Mar. 1, 2022.
- **Yang, Z.** and Diao, C. A deep learning-based model for characterizing crop phenological stages with fused imagery. *2021 SESE Research Review*, Urbana, IL, Apr. 23, 2021.
- **Yang, Z.** and Diao, C. A deep learning-based phenology matching model for characterizing crop phenological stages with fused high spatio-temporal resolution imagery. *Annual Meeting of the Association of American Geographers (AAG)*, Virtual Meeting, Apr. 7-11, 2021.
- Diao, C. and **Yang, Z.** Retrieval of crop growing progress with remote sensing and phenology-matching models. *Annual Meeting of the Association of American Geographers (AAG)*, Virtual Meeting, Apr. 7-11, 2021.
- Diao, C. and **Yang, Z.** An innovative phenology-matching model to estimate crop growing stages. *American Geophysical Union (AGU) Fall Meeting*, San Francisco, CA. Dec. 7-11, 2020
- **Yang, Z.** and Diao, C. A robust hybrid deep learning modeling framework for spatiotemporal image fusion. *Annual Meeting of the Association of American Geographers (AAG)*, Denver, CO, Apr. 6-10, 2020. (Student Honors Paper Competition Award).
- **Yang, Z.** and Diao, C. A Hybrid Deep Learning Model for Fusing Multi-Scale Spatio-Temporal Satellite Imagery. *Illinois GIS Day 2019*, Urbana, IL, Nov. 12, 2019
- **Yang, Z.** and Diao, C. Satellite Data Deluge: An Innovative Deep Learning Model for Fusing Multi-Scale Spatio-Temporal Satellite Imagery. *2019 SESE Research Review*, Urbana, IL, Feb. 15, 2019
- **Yang, Z.** Using Spatial Entropy of Urban Vegetation to Measure Neighborhood Stability in Shrinking Cities. *2018 SEAS Capstone Conference*, Ann Arbor, MI, Apr. 12-13, 2018

## RESEARCH EXPERIENCE

**University of Illinois at Urbana-Champaign, Research Assistant** (Urbana, IL) May 2019-present

- Worked in NSF funded project: *Real-time Computational Modeling of Crop Phenological Progress towards Scalable Satellite Precision Farming*
- Worked in USDA funded project: *Scalable Real-time Satellite-based Crop Yield Forecasting Framework via Deep Learning*
- Developed a phenology-guided deep learning model for fine-scale early crop mapping
- Estimated crop phenological transition dates using phenophase extraction and phenology matching algorithms implemented in R

- Developed hybrid CNN-LSTM deep learning satellite image fusion model to blend MODIS and Landsat imagery

**Environmental Spatial Analysis Lab, University of Michigan, Graduate Research Student**  
(Ann Arbor, MI) Apr. 2017-Apr. 2018

- Measured urban landscape change patterns with spatial metrics under the supervision of Prof. Dan Brown
- Investigated and modeled the relation between urban shrinkage and various landscape and socio-economic variables using R and MATLAB

**Sun Yat-Sen University, Research Assistant** (Guangzhou, China) Sept. 2014-May 2016

- Modified an algorithm on spectral unmixing of multispectral images using ArcGIS, MATLAB and IDL

**South China Sea Institute of Oceanology, Chinese Academy of Science, Research Assistant**  
(Guangzhou, China) Apr. 2015-June 2015

- Programmed in C++ to assimilate data of temperature, water velocity and salinity

## TEACHING EXPERIENCE

**GEOG 379 – Intro to GIS Systems**, Teaching Assistant (UIUC) Spring 2019

**GEOG 105 – Digital Earth**, Teaching Assistant (UIUC) Fall 2018

**EAS 541 – Remote Sensing of Environment**, Graduate Student Instructor (UMich) Spring 2018

## PROFESSIONAL ACTIVITIES AND SERVICE

- **Session Organizer and Chair**, Advances in Agricultural Remote Sensing and Artificial Intelligence (with Chunyuan Diao), *Annual Meeting of the Association of American Geographers (AAG)*, Virtual Meeting, Feb. 25-Mar. 1, 2022.
- **Session Organizer and Chair**, Time Series Remote Sensing in Characterizing Land Surface Dynamics (with Chunyuan Diao), *Annual Meeting of the Association of American Geographers (AAG)*, Virtual Meeting, Apr. 7-11, 2021.

## PROFESSIONAL MEMBERSHIP

Association of American Geographers (AAG)

## COMPUTER SKILLS

ArcGIS, ENVI, Google Earth Engine, MATLAB/R/Python/SQL/C, CUDA, Spark, Hadoop, Keras, PyTorch