

# Yiting Fan

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## EDUCATION

<b>Ph.D.</b> , Geography	<i>West Virginia University</i>	2025
<b>M.Sc.</b> , Applied GIS & Remote Sensing	<i>University of Southampton</i>	2016
<b>B.Sc.</b> , Geographical Information Science	<i>Liaoning Normal University</i>	2015

## PROFESSIONAL APPOINTMENTS

February 2025 - Present	<b><i>Post-doctoral Research Associate</i></b> Dept. of Environmental Science, University of Virginia
Aug 2019 - Dec 2024	<b><i>Graduate Research/Teaching Assistant</i></b> Dept. of Geology & Geography, West Virginia University
May 2020 - Aug 2020	<b><i>Research Intern</i></b> West Virginia GIS Technical Center, West Virginia University
Mar 2018 - Sep 2018	<b><i>GIS Intern</i></b> Chengdu Yuchuang Ltd., China
Nov 2016 - Feb 2018	<b><i>Academic Instructor</i></b> Wycombe Abbey International School
Aug 2015 - Sep 2016	<b><i>Graduate Research Assistant with Dr. Dianna Smith</i></b> School of Geography & Environmental Science, University of Southampton
Aug 2012 - May 2015	<b><i>Undergraduate Research Assistant with Dr. Jun Yang</i></b> Dept. Urban & Environmental Planning, Liaoning Normal University

## **RESEARCH EXPERIENCE**

### **University of Virginia, Dept. Environmental Sciences**

#### ***Postdoc Research Associate***

Feb 2025 – present

- Been collecting terrestrial laser scanning (TLS) data across forest sites
- Created ArcGIS web map to facilitate *in-situ* work procedure within group
- Used ArcGIS Field Maps to facilitate tree locating in field
- Been working on tree segmentation and mapping large-scale forest structural traits using machine-learning based algorithms

### **West Virginia University, Dept. Geology & Geography**

#### ***Graduate Research Assistant with Dr. Brenden E. McNeil***

May 2021 – Dec 2024

- Completed three projects funded by NSF:
  - Testing Tree Crown Economics of Broadleaf Deciduous Forest Sites of North America
  - Leaf Angle Phenology of Broadleaf Deciduous Forest Ecosystems
  - Tree Crown-scale Greendown Rates from Landsat Phenology Data at eight NEON Sites in the Broadleaf Deciduous Forests of North America
- Quantified forest structure and functioning from multi-source data including Airborne LiDAR, hyperspectral data, multispectral HLS data, phenocam RGB images.
- Developed reproducible R and Python routines to automate data processing in
  - Mapping changes in vegetation indices through 6+ years data
  - Extracting plant structural metrics from LiDAR
  - Computing leaf angles from time-lapse photos
  - Extracting vegetation index and phenology from phenocam images and multi-/hyper-spectral data
- Managed content in GitHub repositories
- Presented research at conferences and published journal articles
- Coordinated with outreach staff to collect remote sensing and ground-truth research data
- Mentored and supervised research undergraduates to conduct geospatial projects

### **West Virginia GIS Technical Center**

#### ***Research Intern***

May 2020 - Aug 2020

- Accomplished a GIS project on floodplain monitoring and prediction
- Digitized, geocoded and mapped surface flooding features and land use/land cover in ArcGIS Pro and ArcGIS online
- QA/QC and created relational database for building features within the flood plain

### **Chengdu Yuchuang Ltd., China**

#### ***Research Intern***

Mar 2018 - Sep 2018

- Created and geocoded buildings features in ArcGIS
- Created relational database for the identified features
- QA/QC GIS features

**University of Southampton, School of Geography and Environmental Science****Graduate Research Assistant** with Dr. Dianna Smith

Aug 2015 - Sep 2016

- Accomplished a research project entitled “Examining the Impact of Climate Induced Soil Moisture Change on Lake Chad, Africa”
- Quantified and mapped vegetation cover in wetlands as part of a group project
- Collected and pre-processed terrestrial LiDAR data

**Liaoning Normal University, Dept. Urban and Environmental Planning****Undergraduate Assistant** with Dr. Jun Yang

Aug 2012 - May 2015

- Extracted Land Surface Temperature from remote sensing data in ArcGIS and ENVI
- Worked on a research project entitled “Spatiotemporal Relationship between Urban Greenness and Heat Island Effect: A Case Study in Dalian, Liaoning”

**TEACHING EXPERIENCE****West Virginia University, Dept. Geology & Geography****Graduate Instructor & Teaching Assistant**

Aug 2019 - May 2021 &amp; Jan 2021 - May 2021

- Designed lab exercises for a GIS course (GEOG350 Geographic Information Science)
- Taught undergraduate courses relating to GIS, remote sensing, physical geography, geology and the coincident laboratories
- Taught introductory- to senior-level laboratories (GEOG 350/550 Geographic Information Science)

**Wycombe Abbey International School****Instructor; Academic Tutor**

Nov 2016 - Feb 2018

- Taught geography and computer science for the purpose of the U.K. General Certificate of Secondary Education (GCSE) exam (equivalent to the U.S. high school diploma)
- Mentored K12 students from grade 7 to 12

**LEADERSHIP EXPERIENCE****West Virginia University, Dept. Geology & Geography****Graduate Research Assistant** with Dr. Brenden E. McNeil

May 2021 – Dec 2024

- Mentored and managed undergraduate researchers in conducting research and presenting at symposiums/conferences marking project milestones

**West Virginia University Chinese Scholars & Students Association****President**

Aug 2022 - Aug 2024

- Non-profit organization serving as academic/career support and networking for current and newcoming scholars and students
- Hosted cultural events

## **INVITED LECTURES & PRESENTATIONS**

### **Colloquium 2024**

#### ***Lecturer and Guest Speaker***

Mar 2024

- Delivered a talk and led a group discussion with visiting Geospatial Data Scientist Shiloh Elliot from Sandia National Laboratories

### **NASA SPACE Camp 2021**

#### ***Lecturer and Guest Speaker***

Jul 2021

- In partnership with Fairmont State University, NASA IV&V Education Resource Center (ERC) Program, and Destination SPACE
- Introduced satellite technology and offered guided laboratory exercise, with the goal of providing engaging and inspiring educational experiences for students from underrepresented backgrounds

## **CONFERENCE & TRAINING**

### **American Geophysical Union (AGU) Fall Meeting 2025**

Dec 2025

San Francisco, CA

Presenting project entitled “Tree Crown-scale Greendown Rates from Landsat Phenology Data at eight NEON Sites in the Broadleaf Deciduous Forests of North America”

### **NSF Macrosystems Biology and NEON-Enabled Science (MSB-NES)**

Feb 2024

Virtual Meeting

Presenting project “Does Tree Crown Architecture Differ by Tree Species? A test with NEON data”

### **American Geophysical Union (AGU) Fall Meeting 2023**

Dec 2023

San Francisco, CA

Presenting project entitled “Does Tree Crown Architecture Differ by Tree Species? A test with NEON data”

### **NCAR-NEON-Community Workshop**

Jun 2023

Boulder, CO

Leveraged NCAR-NEON Community Land Model (CLM) and data visualization tools to develop new research avenues in linking geosciences and ecology. Discussed how this collaboration can best serve the community going forward.

<https://www.neonscience.org/get-involved/events/ncar-neon-community-workshop>

### **West Virginia Association of Geospatial Professionals Annual Meeting**

May 2023

Lansing, WV

Discussed and shared knowledge and experience in mapping technologies, natural resource management, LiDAR, and economic development in this largest gathering of geospatial professionals in West Virginia.

### **Landscape Exchange Network for Socio-Environmental Systems (LENS) Graduate Student Association (GSA)**

Sep 2022

Discussed state-of-the-art remote sensing data to tackle social-environmental challenges through co-developed and collaborative research within landscapes surveyed by the National Ecological Observatory Network's (NEON) Airborne Observation Platform (AOP).

### **LENS Workshop**

May 2022

SESYNC, 1 Park Pl, Annapolis, MD

Worked on defining social-ecological systems research and the relevant data and methods with respect to the NEON AOP data. More details:

<https://lensrcnorg.wordpress.com/2022/07/04/lens-workshop/>

### **National Observatory Ecological Network (NEON) Airborne Observation Platform (AOP) Tour**

May 2022

Winchester, VA

Participated in a media interview during a tour of National Ecological Observatory Network (NEON) aircraft. Media release:

<https://lensrcnorg.wordpress.com/2022/08/04/touring-the-aop-in-the-mid-atlantic-domain/>

## **HONORS, AWARDS & CERTIFICATES**

### **Certificate in GIS and Spatial Analysis**

2024

Davis College Of Agriculture, Natural Resources and Design, West Virginia University

### **Outstanding Graduate Teaching Assistant 2020 - 2021**

2021

Dept. Geology & Geography, West Virginia University

<https://eberly.wvu.edu/news-events/eberly-news/2021/05/11/eberly-college-announces-outstanding-students>

### **JAVA Software Engineer Certificate**

2015

Computer Education Authorization and Certificate

## **PUBLICATIONS & ABSTRACTS**

(In-preparation) Fan, Y., Fisher, G., Elmore, A. & McNeil, B.E. (2025) Tree Crown-scale Greendown Rates from Landsat Phenology Data at eight NEON Sites in the Broadleaf Deciduous Forests of North America. *Remote Sensing of Environment*.

(In-preparation) Fan, Y., Indomenico, A., Keefer, G., Powell, M., Channels, C., Cade, E., Hughes, C., Nicolai, L., Elmore, A., McNeil, B (2025) Leaf Angle Phenologies of Broadleaf Deciduous Forests Ecosystems. *Agricultural and Forest Meteorology*.

(Submitted) Fan, Y., Elmore, A. & McNeil, B.E. (2025) Testing tree crown economics with NEON data from eight sites across the broadleaf deciduous forests of North America. *Ecology*.

Indomenico, A., McNeil, B. E., & Fan, Y. (2024). Does the phenology of mean leaf angle track atmospheric vapor pressure deficit?. *AGU24*.

Fan, Y., Cade, E.R., Channels, C.W., Fisher, G.B., Guinn, S., Hughes, C., Nicolai, L.R., Elmore, A. & McNeil, B.E. (2023) Does Tree Crown Architecture Differ by Tree Species? A test with NEON data. *AGU Fall Meeting 2023, held in San Francisco, CA, 11-15 December 2023*. (poster available at <https://agu23.ipostersessions.com/default.aspx?s=39-8A-74-C4-8F-FA-BE-3C-D5-10-34-43-12-04-2D-19#popup-abstract>)

Keefer, G., Fan, Y., Elmore, A. & McNeil, B.E. (2022) Leaf Angle Phenologies of Tree Species Surrounding Nine NEON Towers. *AGU Fall Meeting 2022, held in Chicago, IL, 12-16 December 2022*, id. B45L-1875.

<https://ui.adsabs.harvard.edu/abs/2022AGUFM.B45L1875K/abstract>

Brown, W., McNeil, B., Elmore, A., Guinn, S. & Fan, Y (2021) How Does the Decline in Summer Greenness Differ by Tree Species? A Test Across Nine NEON Sites. *AGU Fall Meeting 2021, held in New Orleans, LA, 13-17 December 2021*, id. B25I-1596.

<https://ui.adsabs.harvard.edu/abs/2021AGUFM.B25I1596B/abstract>

Maxwell, A. E., Bester, M. S., Guillen, L. A., Ramezan, C. A., Carpinello, D. J., Fan, Y., Hartley, F.M., Maynard, S.M. & Pyron, J. L. (2020) Semantic segmentation deep learning for extracting surface mine extents from historic topographic maps. *Remote Sensing*, 12(24), 4145. <https://doi.org/10.3390/rs12244145>

## **SKILLS & TECHNIQUES**

ESRI software including ArcGIS	ENVI
Python	ERDAS IMAGINE
R programming	ImageJ / Fiji
MATLAB	SQL
JMP	LASTOOLS
Geographical Information Systems	Dron2Map

## **PROFESSIONAL SOCIETY SERVICE & MEMBERSHIPS**

American Geophysical Union	Women in Remote Sensing (AAG group)
Association of American Geographers	