

Yiting Fan

Department of Environmental Sciences, University of Virginia
Clark Hall, 291 McCormick Rd, Charlottesville, VA 22904-4123
yf0012@mix.wvu.edu
(304) 216-6390

EDUCATION

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

PROFESSIONAL APPOINTMENTS

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

Women in Remote Sensing (AAG group)