

# The Graticule Weekly

UGA Geography's Weekly Newsletter



## RESEARCH SPOTLIGHT

### UGA Researchers Work to Deploy GeoAI in a Changing World

A new team of UGA researchers has been established to engage in a series of research efforts focused on optimizing geospatial artificial intelligence. The purpose of this research is to enhance and contribute to public safety and resilience, ultimately benefiting communities, society and the environment.

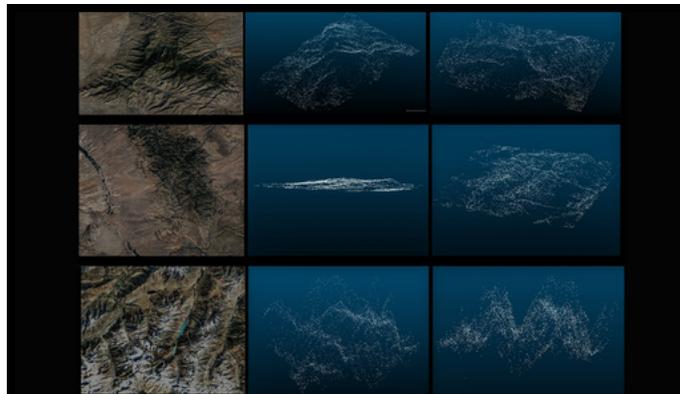


Deepak Mishra is the Merle C. Prunty, Jr. Professor and associate department head in the Franklin College of Arts and Sciences. (Photo by Peter Frey)

The new research is led by Deepak Mishra, Merle C. Prunty, Jr. Professor, Associate Head in the Department of Geography, and Principal Investigator on the new grants projects. The project investigators also include Andrew Grundstein and Thomas Mote from the Department of Geography, Lakshimish Ramaswamy, Suchendra Bhandarkar and In Kee Kim from the School of Computing, and Guoyu Lu from the College of Engineering. Alan Flurry, Director of Communications for Franklin College, recently explored the team's work and spoke with the investigators in an article for @UGA Research:

"The capability to deploy GeoAI for real-time usage will enable first-responders to react rapidly to changes in terrain around the world resulting from climate change and natural disasters. The campus-wide research effort, which includes faculty from the Franklin College of Arts and Sciences and the College of Engineering, is funded by the U.S. Department of Defense to expand the capabilities of GeoAI models. The work is particularly critical in cold regions around the globe that, as they continue to warm at a rapid pace due to climate change, also become increasingly conducive to commercial shipping, fishing, and other strategic activities. Remote sensing-based terrain awareness builds on existing UGA strengths in satellite-based mapping and modeling, as well as the development of sophisticated 3-D object detection for autonomous navigation applications.

Three new research projects will optimize geospatial artificial intelligence to promote public safety and resilience. Here, a satellite image (left) is shown next to corresponding point clouds, where each point represents height values. Researchers can run AI on multi-angle satellite images to produce a 3D reconstruction of a geographic area. (Photo courtesy of Deepak Mishra)



## General News and Announcements



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Past editions of The Graticule Weekly are available to view on our website!



With the Spring semester in full swing, our community remains busy as faculty, staff, students, and visitors navigate our campus. Prioritize your transportation safety and the safety of other's by checking out the Watch For Dawgs official website.



Please download the new UGA Safe app from the Google Play or Apple App stores. Login using your UGA MyID or register as a guest to take advantage of a variety of safety features. For more information, please visit the UGA Office of Emergency Preparedness website.

Follow us on social media!



# RESEARCH SPOTLIGHT (CONT.)

## UGA Researchers Work to Deploy GeoAI in a Changing World

“The significant expansion in the need for geospatial AI coincides with UGA’s explosive growth of capacity across the AI research area,” said Deepak Mishra. “Air Force and Army Corps of Engineers’ interest in GeoAI comes at a fortuitous time for the university as we buildout and solidify our AI modeling techniques.”

“This research seeks to address some of the fundamental challenges in building effective, efficient and practical AI tools for complex Geospatial problems,” said Lakshmish Ramaswamy, professor and associate director in the [School of Computing](#) and a co-principal investigator on the projects. “Our goal is to design novel AI architectures, algorithms and systems that take into account the unique characteristics of the geospatial domain.”

“By analyzing satellite data with AI to identify terrain features, we plan to create snow and ground condition maps, optimizing route planning and improving travel safety in cold regions,” said Andrew Grundstein, professor of geography and co-P.I. on the project.

Mishra said the teams are currently in the sausage-making phase of the project. “We’re focused on where it’s working and where we have some way to go... the work is progressing, and ultimately the goal is to have the NeRF algorithm to provide to the Army Corps to test in different areas.”



Climatologist Andrew Grundstein, professor of geography in Franklin College, is also a co-principal investigator on the geospatial AI project. (Photo by Rick O’Quinn)

[Click here to read the full article on the @UGAResearch site.](#)

## UPCOMING DEFENSES



### Aiden Hysjulien - Final Dissertation Defense

"In Search of New Horizons: Equitable Neoliberalism, Economic Democracy, and the Struggle for the Future of the Bronx."

March 26, 2024, 1:30pm, GEOG Room 147



### Sheryl Baggett - Final Thesis Defense

"Flying High, Bracing for Impact: the Effect of Globalization on U.S. Pilots and Flight Attendants"

March 27, 2024, 10:30am-12:30pm, GEOG Room 147



### Kayleigh Taillefer - Thesis Proposal Defense

"Deep Learning and Geospatial Analysis to Locate and Assess Social Impacts of Tornadoes on Mobile Home Parks"

March 28, 2024, 2:00-4:00pm, GEOG Room 147



### Max Appelbaum - Final Thesis Defense

"Satellites, Drones, and Cars: An Integrated Approach to Urban Heat Island Observation"

April 1, 2024, 10:00-12:00pm, GEOG Room 147

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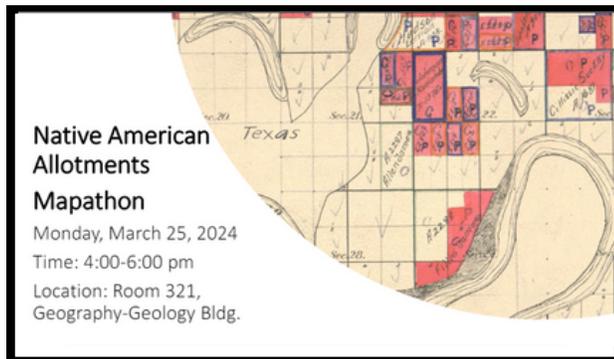


# MARK YOUR CALENDAR



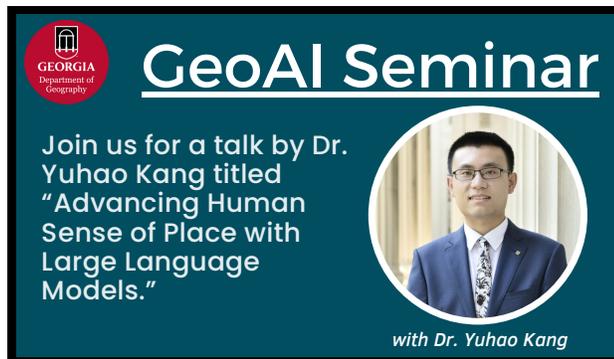
March 25  
4:00- 6:00 pm  
GGY 321

The U.S. Forest Service and Geography's Center for Geospatial Research invites volunteers with basic GIS experience to participate in a mapathon aimed at digitizing historical maps of Native American Allotments



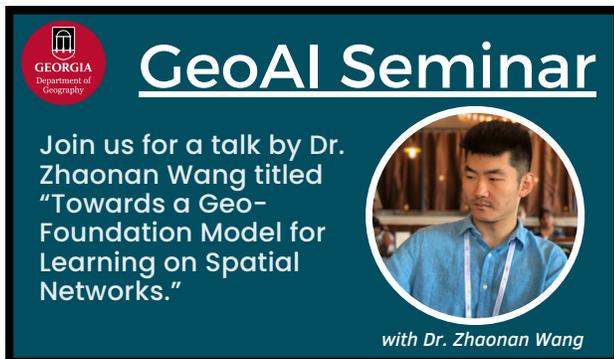
March 29  
11:00-12:10pm  
GGY 200D

Dr. Yuhao Kang from the University of South Carolina will deliver a lecture titled "Advancing Human Sense of Place with Large Language Models." All are welcome to attend.



April 23  
4:00-5:00pm  
GGY 321 & Zoom

Dr. Zhaonan Wang from the University of Illinois Urbana-Champaign will deliver a lecture titled "Towards a Geo-Foundation Model for Learning on Spatial Networks." All are welcome to attend. [Join via Zoom here!](#)



April 25  
3:00pm  
GGY Lobby (by the globe)

Join us for our 2024 Geography Undergraduate Honors and awards reception! All are welcome to attend.



May 9  
3:30pm  
MLC 303

Join us for our 2024 Geography Undergraduate graduation reception!



## Social Media

Want to stay up to date with all things UGA Geography? Follow us on our social media accounts. If you have any events, news, awards, or other information you'd like to share on our social media, please reach out to Matt Colonius.



<https://www.facebook.com/GeographyDepartmentUGA/>



<https://www.instagram.com/geographyuga/>

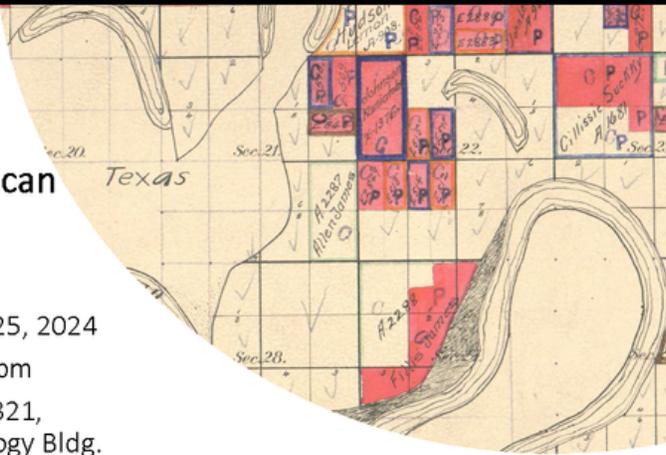


[https://twitter.com/UGA\\_Geography](https://twitter.com/UGA_Geography)



<https://geography.uga.edu>

# FEATURED EVENTS



## Native American Allotments Mapathon

Monday, March 25, 2024  
Time: 4:00-6:00 pm  
Location: Room 321, Geography-Geology Bldg.

- **Crowdsource the Digitizing** of 19<sup>th</sup> century Native American allotment maps from Oklahoma reservations for modern use within a GIS.
- **Develop** geospatial technical and analytical skills.
- **Connect** with your peers, contribute to a crowdsourced event building a GIS database for understanding a social justice issue of land allocation.

The U.S. Forest Service and Geography's Center for Geospatial Research invites volunteers with basic GIS experience to participate in a mapathon aimed at digitizing historical maps of Native American Allotments. In the late 19<sup>th</sup> century, the U.S. government decided to divide treaty-based reservations into privately-owned lots known as allotments. According to Dr. Rebecca Dobbs of the USFS, the process continued through the first-half of the 20<sup>th</sup> century, despite obvious problems. Instructors will lead participants in the use of ArcGIS Pro to digitize the boundaries and ownership attributes of the information-rich scanned plat maps.

This event will expose volunteers to the entire process of creating geospatial data from primary records. Volunteers will also gain advanced editing skills in ArcGIS Pro and be able to connect with individuals with similar interests.

Come help transform historic maps of Native American properties into geospatial data ready for modern geoanalytics. Upon approval by USFS researchers, the resulting data will be available for student and faculty research.



For more information, please contact: Amanda Aragon at [Amanda.Aragon@uga.edu](mailto:Amanda.Aragon@uga.edu).

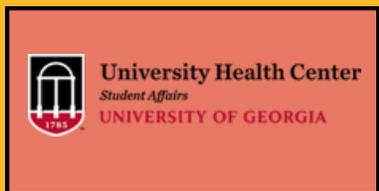


Fresh Express is a new student-led emergency food assistance program, striving to serve University of Georgia students with balanced meals. [Sign up here.](#)



Join us every Friday for International Coffee Hour from 11:30am to 1:00pm in the Memorial Hall Ballroom! 11:30am - 1:00pm  
| Memorial Hall Ballroom

## Prioritize Your Well-Being This Semester:



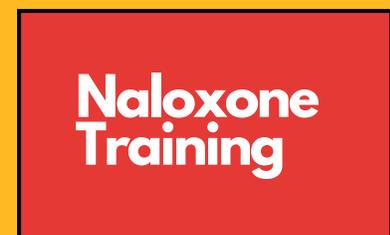
UMatter: An April 8th  
Upstander 5:00 pm  
Intervention MLC 253  
Program

UMatter is an upstander intervention program to support a culture that cares about and helps each other in this community. [Learn more here!](#)



Nutrition March 26th  
Kitchen: \$5 12:45 pm  
Cooking Class UHC

*Learn how to cook a healthy meal with one of the dietitians the University Health Center in the Nutrition Kitchen. FYOS approved! Call 706-542-8690 to register*



Naloxone Training March 26th  
5:30 - 6:30pm  
MLC Room 153

*Save a life and stop opioid overdoses! Learn what an overdose is, what the signs and symptoms of an overdose are and how Naloxone and the OneBox are distributed across campus.*

# STUDENT OPPORTUNITIES

## ★ This Week's Featured Opportunity ★

### • [Fall 2024 Sustainability Internships](#)



The Office of Sustainability Student Internship Program provides opportunities for experiential learning and professional development while making a positive and tangible impact within the University of Georgia and Athens communities. The Office of Sustainability partners with campus and community organizations to identify real-world challenges and develop sustainable solutions. Leadership training is enhanced through a collaboration with J.W. Fanning Institute for Leadership Development.

**NOW ACCEPTING APPLICATIONS FOR THE FOLLOWING POSITIONS IN FALL 2024:**

*Campus as a Living Lab Intern*

*UN Regional Center of Expertise on Education for Sustainable Development (UNRCE)*

*Sustainability Certificate Intern*

*Sustainability Leadership Program Intern*

*Bike Programs Intern*

*Strategic Communications Intern*

*Farm to Campus Intern*

*Housing Sustainability Intern*

*Green Roof/Green Zone Intern*

*Campus Arboretum*

*Campus Compost Intern*

*Greek Life Intern*

*Zero Waste Infrastructure Intern*

*Commissioning (Cx) Intern*

*Concrete Jungle Intern*

*Campus Kitchen Communications*

*E-Mobility Intern*

*Urban Agriculture*

*Sustainability Metrics - STARS*

***Are you interested in applying for one of these positions?***

***The Office of Sustainability is committed to cultivating an inclusive, diverse and respectful workplace. All current students are welcome and encouraged to apply. Applications for Fall Semester 2024 are due by March 31, 2024.***

**[Apply Here!](#)**

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Follow us on social media!



# STUDENT OPPORTUNITIES

- [Maymester Field Study Service-Learning Opportunity](#)

*This program is a service-learning Domestic Field Study course in which students will conduct field and academic research at UGA Marine Extension and Georgia Sea Grant facilities to write stories about the people and aquaculture of the Georgia coast. A week-long residency at the Penn Center on St. Helena Island, SC will provide students with an immersive learning experience in the Gullah Geechee culture of the Sea Islands as the starting point for our field work. Contact Dr. Elizabeth Davis at [eadavis@uga.edu](mailto:eadavis@uga.edu)*



- [Tutor with UGA Athletic Association Academic Support Services](#)

*Provide individual and small group tutoring to student-athletes in the Rankin Smith Student-Athlete Academic Center. Assist students in improving academic achievement by meeting with them weekly to clarify concepts, enhance study skills, and review class materials. \*If you are interested, please reach out directly to Whitney Burton at [wburton@sports.uga.edu](mailto:wburton@sports.uga.edu)*

- [Nelson/Nygaard Transportation Planning Summer 2024 Internships](#)

*Nelson/Nygaard Consulting Associates is seeking Transportation Planning Interns to join our team during the summer of 2024. We're looking for students who are eager to gain hands-on experience in the transportation planning field. This is an outstanding opportunity to be involved in the firm's nationally recognized work in planning for more equitable and livable communities.*

*Our summer intern program is designed to give current students an opportunity to gain experience with planning work that helps shape our communities. You will work on and produce deliverables for some of our most exciting projects, supporting junior and senior planners with writing and research, data analysis and mapping, and client and community engagement activities. [Learn more here!](#)*

- [GIS Specialist at The Ray](#)

*The GIS specialist will report directly to the GIS Manager and will:*

*Support the development and management of GIS maps and applications*

*Perform geospatial data development and analysis*

*Efficiently manage geospatial databases and aerial photography*

*Accurately maintain geospatial database information by interpreting data from a variety of sources and creating, verifying, and updating information in the geospatial database through the use of GIS software and technologies*

*Acquire, process, integrate, visualize, and analyze geospatial data provided by The Ray's partners into existing GIS datasets, and GIS products*

*Attend meetings as requested by The Ray staff.*

**[Learn more here!](#)**

## Social Media

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<https://www.facebook.com/GeographyDepartmentUGA/>



<https://www.instagram.com/geographyuga/>



[https://twitter.com/UGA\\_Geography](https://twitter.com/UGA_Geography)



<https://geography.uga.edu>

# STUDENT OPPORTUNITIES

- [Summer 2024 Data Science Internship with OpenTopography](#)

*OpenTopography is recruiting at least one Data Science intern this summer via the EarthScope Student Careers Internship Program. The intern(s) will work with the OpenTopography team to ingest and process data, and/or to develop workflows and services related to processing, analysis, and visualization of topographic data managed by OpenTopography. Open to graduate and upper-level undergraduate students, applicants must be authorized to work in the U.S. [Learn more and apply here!](#)*

- [Community Planner and Grants Specialist Positions, NGRC](#)

*The Northeast Georgia Regional Commission has two positions open, a Community Planner and a Grants Specialist. The job listings and responsibilities are posted on our website: <https://negrc.org/careers/>*

*We're looking for people who are creative and interested in working on community-based projects related to housing development, infrastructure, solid waste, development of public facilities, conservation, comprehensive planning, and community engagement. Good writing and public speaking skills are important, and some experience with graphic design and ArcPro would be preferred.*

[Learn more here!](#)

- [Postdoctoral Position in AI and Census Microdata, Univ. of Utah](#)

*The [College of Social and Behavioral Science](#) at the [University of Utah](#) is seeking applicants for a Postdoctoral Research Associate with an interest in applying Artificial Intelligence (AI) to US Census data. AI is having far-reaching effects as it moves into everyday systems, such as healthcare, education, policy, immigration, and criminal justice, often with a focus on individualized outcomes.*

*Interdisciplinary research is critical for developing "responsible" technologies that forward the public interest, recognizing AI as both a technological approach and a social practice (e.g. how humans are classified, how we identify technological problems, how we understand our society). Federal Statistical Research Data Centers, such as the [Wasatch Front Research Data Center \(WFRDC\)](#), located in the Interdisciplinary Exchange for Utah Science (NEXUS), offer a unique resource of census microdata, allowing the exploration of socio-demographic dynamics at an individual level, and there is a significant opportunity to apply AI methodologies to these data.*

*We seek a researcher interested in developing research that integrates AI methods with the type of microdata held in the WFRDC. The successful candidate for this position will have a record of working with socio-demographic data and AI methods, and a commitment to responsible AI applications.*

[Learn more here!](#)

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University Health Center  
Student Affairs  
UNIVERSITY OF GEORGIA

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Upstander 4:30 pm  
Intervention MLC 253  
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UHC

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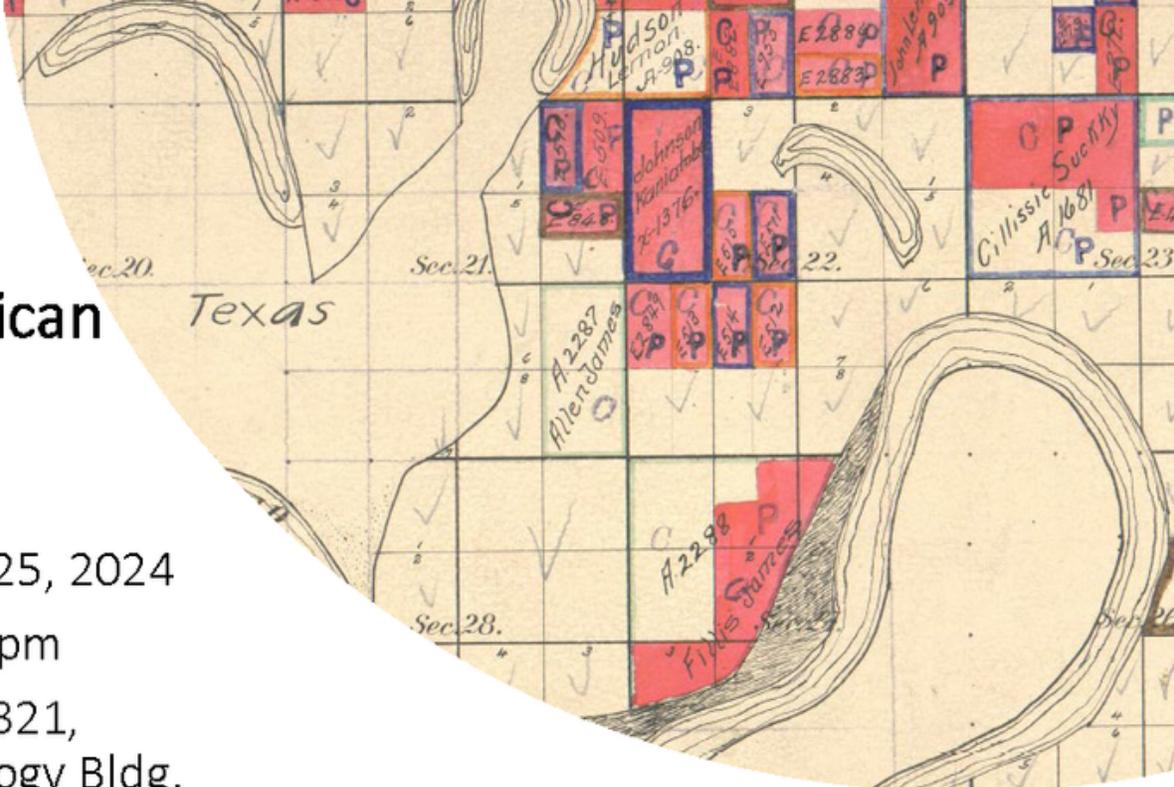
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# UGA GEOGRAPHY GeoAI Seminar

IN PERSON  
AND ONLINE

Join us for a talk by Dr. Zhaonan Wang titled "Towards a Geo-Foundation Model for Learning on Spatial Networks."



**TUESDAY**  
APRIL 23, 2024



**TIME**  
4:00 – 5:00 P.M.



**GEOG RM. 321**  
& ZOOM



SCAN THE QR  
CODE TO JOIN  
VIA ZOOM!



**ZHAONAN WANG**  
University of Illinois  
Urbana-Champaign



### GET HELP

Whether it's a life-threatening emergency, a non-emergency concern, or a crime tip; there are several options to relay those concerns.

### MOBILE BLUELIGHT

Immediately call the UGA Police and share your location in real-time with them.

### FRIEND WALK

Send your location in real-time to a friend so they can watch you as you walk to your destination.

### CHAT WITH UGA POLICE

Report a concern by texting with UGA Police.

### HOW TO RESPOND TO AN EMERGENCY

Conveniently located in one place to help you take immediate action.



**DOWNLOAD THE APP!**

[t.uga.edu/7Xf](https://t.uga.edu/7Xf)

