

GEOG 3319: Geographic Field Techniques

Lecture 01 Introduction

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Department of Geography

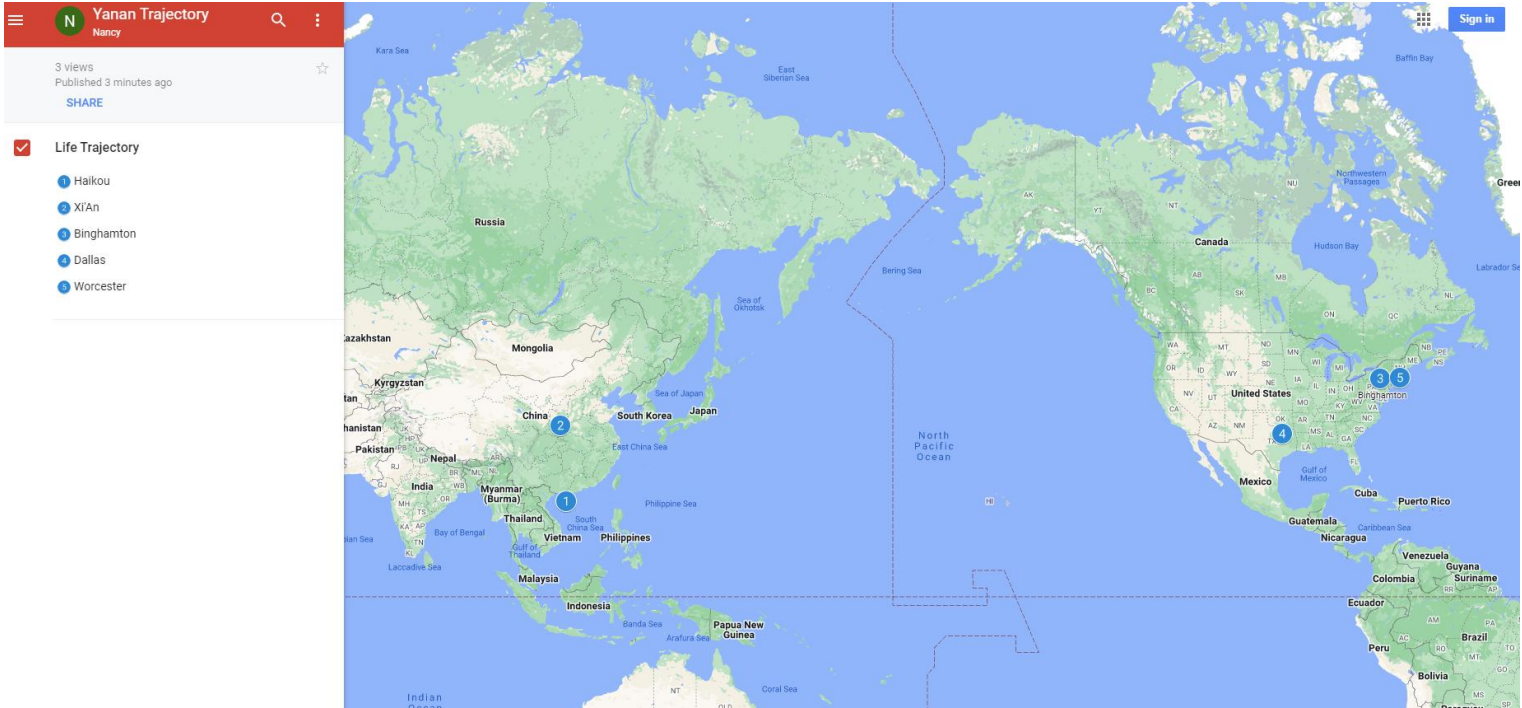


Geography

Overview

- Introduction
 - ✓ Who am I?
 - ✓ Who you are?
- Course overview and expectations
 - ✓ Syllabus
- Software
 - ✓ ArcGIS Pro

Who am I?



Past Teaching Experience

- **Python Programming**



1. **Manipulating Spatial Data**
2. **Web Mapping**
3. **Processing Raster**
4. **Data Analysis**
5. **Creating Custom Tool**
6. **Data Visualization**
7. **...**

- **Spatial Database**



1. **Geodatabase**
2. **SQL**
3. **Proximity Analysis**
4. **Geometry processing**
5. **Raster processing**
6. **PostSQL with python**
7. **...**

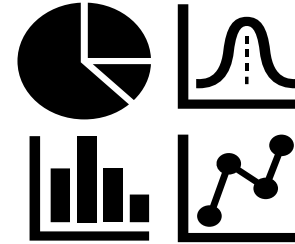
Past Teaching Experience

- **Web Mapping**



1. HTML
2. CSS
3. JS
4. Python Web Mapping
5. R Web Mapping
6. ArcGIS Maps for JavaScript
7. ...

- **Intermediate Statistics**



1. Bivariate regression
2. Logistics regression
3. PCA
4. GWR
5. Spatial Autocorrelation
6. ...

Teaching in UCA

- **GIS I**



1. **Spatial Data**
2. **GIS software**
3. **Geodatabase**
4. **Cartography**
5. **Raster**
6. **Programming in GIS**
7. **...**

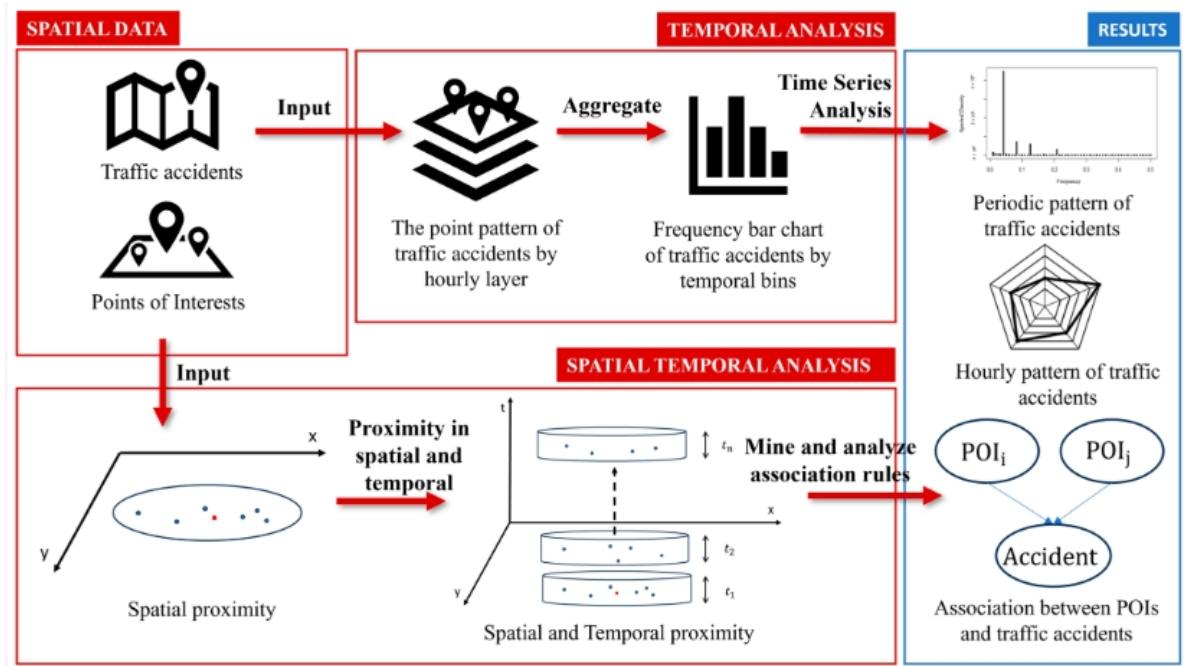
- **Geographic Field Techniques**



1. **GPS**
2. **Drone**
3. **Esri Mobile App**
4. **Field Map**
5. **Survey 123**
6. **ArcGIS Dashboard**
7. **...**

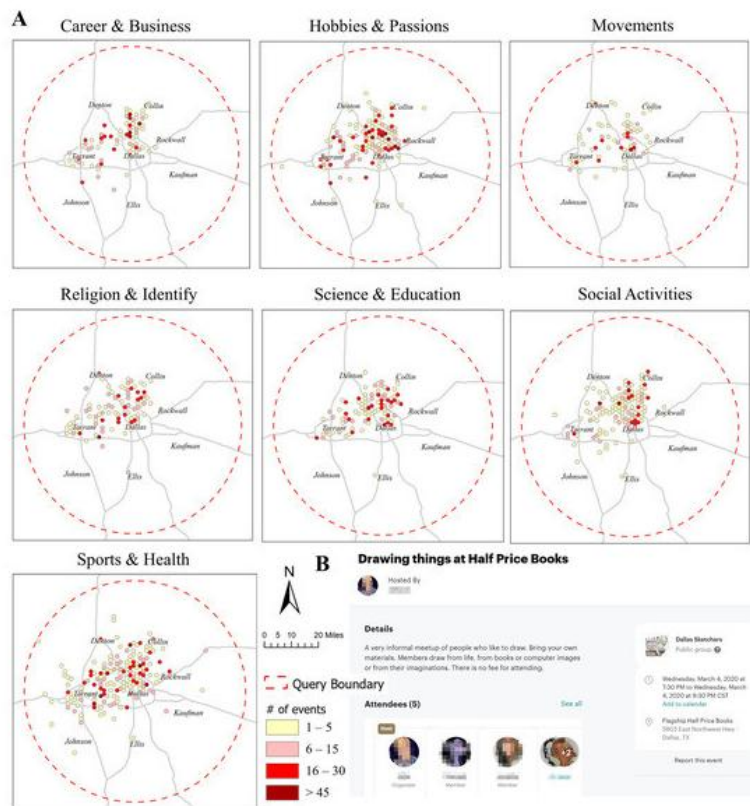
Research

✓ Repetitive Pattern of Traffic Accidents in City of Dallas, TX



Research

- What Local Environments Drive Opportunities for Social Events?



NATURAL LANGUAGE PROCESSING

Spatial Entity Recognition - Extracting street names affected by flooding using NLP.

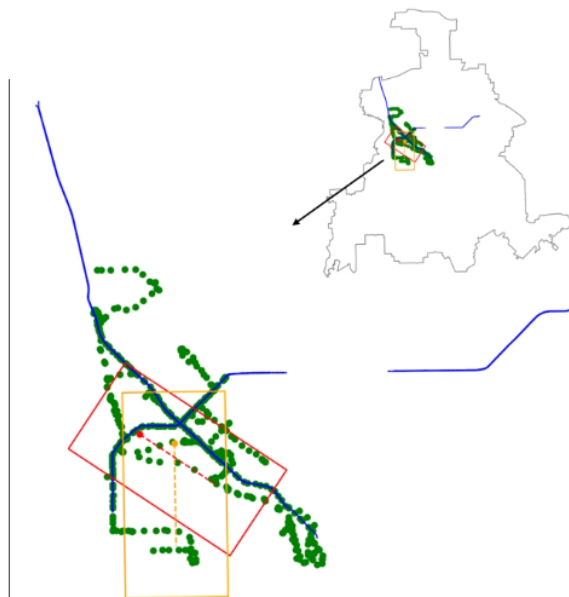
Input: Text

Narrative from Dallas Police Department Report

1. Dallas PD closed portions of **Mockingbird Lane** near **Harry Hines** due to high water.

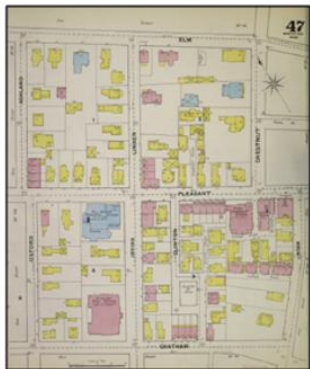
Output: Entity Recognition

Flooding area:
Red polygon and Orange polygon



Research

✓ Sanborn Historical Map



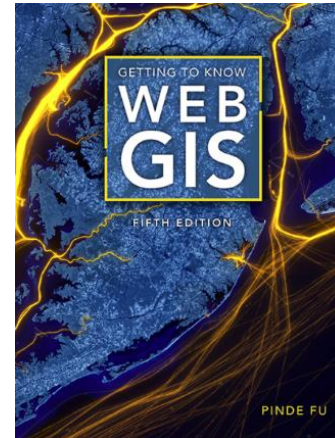
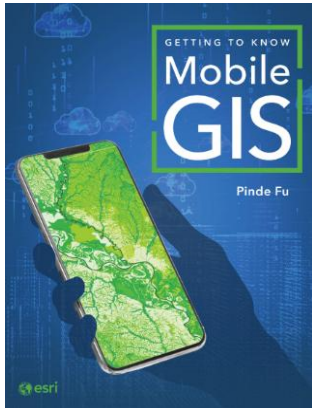
About you

- Your background (e.g., name, major)
- Share something from your summer break
- What relevant experience do you have with Geographic Field Techniques?
- What are your expectations for this course?

Course overview and expectations

○ Book

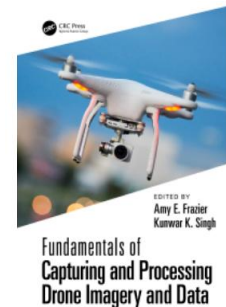
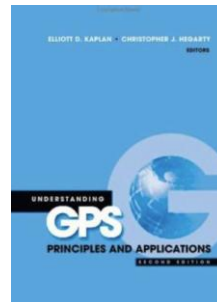
- ✓ Getting to know Mobile GIS by Pinde Fu (ISBN: 9781589487079)
- ✓ Getting to Know Web GIS, by Pinde Fu (Esri Press, 5th Edition, ISBN: 9781589487079)



Course overview and expectations

○ Book

- ✓ Understanding GPS: Principles and Applications edited by Elliott D. Kaplan and Christopher J. Hegarty (ISBN-10: 1580538940; ISBN-13: 9781580538947)
- ✓ Fundamentals of Capturing and Processing Drone Imagery and Data edited by Amy E. Frazier and Kunwar K. Singh (ISBN 9780367245726)



Software

- ArcGIS online account, provided by Geography department
- ArcGIS Pro 3.0, provided by Geography department

Course overview and expectations

○ Course Structure (4-credit)

✓ Lecture (T: 2:40- 3:55 pm)

- Interactive and inclusive environment
- Feel free at any time during lecture to ask a question and make a comment
- Lecture will be recorded and delivered to the students if necessary

✓ Lab exercise (R: 2:40 – 3:55 pm)

- Work individually on the in-class exercise
- Guidance will be provided; demonstration will be provided if necessary
- When submit exercise, copy questions in the lab and provide answers in a word file
- Feel free at any time to ask a question

Course overview and expectations

○ Course Structure

✓ Final project

- For 4-credit version of this course only
- Design your own research, get your own data, process the data, generate maps, and write a final report
- You can refer to the previous exercise to get help

Course Schedule

- Oct. 13-17
 - ✓ Arkansas GIS User Forum: no class & lab
- Oct. 27-31
 - ✓ SWAAG conference
- Nov. 24-28
 - ✓ Thanksgiving Break
- Dec. 1-5
 - ✓ Project analysis
- Dec. 8-12
 - ✓ Final Presentation

Course overview and expectations

- Grading (20% later deduction)
 - ✓ 4-credit version

Table 2 Grade distribution

Item	Points	Description
Lab exercises	50 points each, 500 points total	10 lab exercises. Each will be provided with guidelines.
Project	50 points	Project data collection
	150 points	Project Presentation, peer-reviewed
	100 points	Project Report
Total	800 Points	

Course overview and expectations

- Grading (20% later deduction)
 - ✓ 4-credit version

Table 3 Grade Scale

90%- 100%	A	> 720 points
80%- 90%	B	> 640 Points
70%- 80%	C	> 560 Points
60%- 70%	D	> 480 Points
0%- 60%	F	< 480 Points

Course overview and expectations

○ Late penalty for lab

- ✓ Labs that are not turned in by the due date can be turned in up to 2 days late with a 20% penalty. Labs will not be accepted after this 2-day period.

○ Final presentation

- ✓ The final presentation cannot be rescheduled. You are expected to do the final presentation at the time specified.

Course overview and expectations

○ Attendance

- ✓ Prolonged absence from class will inhibit your understanding of the lecture material and prevent you from receiving help on assignments
- ✓ We may do some bonus exercises during the class time. If you are not shown up, you simply lose it
- ✓ Up to 3 times of absence may result in moving out from this class
- ✓ If you cannot attend class, please contact me before class
- ✓ Sick leave is acceptable, please contact me for re-arranging lab exercise etc.

Course overview and expectations

○ Feedback Response Time

- ✓ The instructor generally replies to emails within 48 hours, except during holidays.
- ✓ Often the instructor replies much more quickly, but you should not count on a same-day reply.
- ✓ Please plan accordingly so that you don't miss deadlines.

Course overview and expectations

○ Classroom Etiquette

- ✓ Switch cell phones off and place them out of view. Do not use phones during class. Resist the impulse!
- ✓ Computers are permitted for notetaking only.
- ✓ Do not sleep in class or leave once a lecture has started.
- ✓ Do not pack up and prepare to leave until the instructor has indicated that class is over
- ✓ No eCigarettes permitted in the classroom.
- ✓ You are encouraged to think critically and ask stimulating questions, but always respect your fellow students and your instructor.

Course overview and expectations

○ Evaluations

- ✓ Student evaluations of a course and its professor are a crucial element in helping faculty achieve excellence in the classroom and the institution in demonstrating that students are gaining knowledge.
- ✓ Students will receive evaluation notification from university.

Course overview and expectations

○ Structure

✓ In-person

- Lecture
- Lab
- Final presentation
- Office hour
 - MW 10:00 am to 11:50 am
 - Location: Lewis 154

✓ May Change!

- Please regularly check your Blackboard and or email

Course overview and expectations

- After this course

- ✓ explain Mobile GIS, and Web GIS principles and concepts
- ✓ collect spatial data using cell phone through Field Map and Suvey123
- ✓ implement field data into GIS software (Esri ArcGIS)
- ✓ understand the integration of technology and teamwork in Mobile GIS operations
- ✓ produce maps using ArcGIS online mapping technique
- ✓ understand ArcGIS Living Atlas contents
- ✓ Create multiple dynamic maps using ArcGIS StoryMaps and 3D Web Scene
- ✓ Explain GNSS principles and concepts
- ✓ fly UAV
- ✓ process UAV image using GIS software

Course overview and expectations

○ Contact Info

✓ Lewis 154

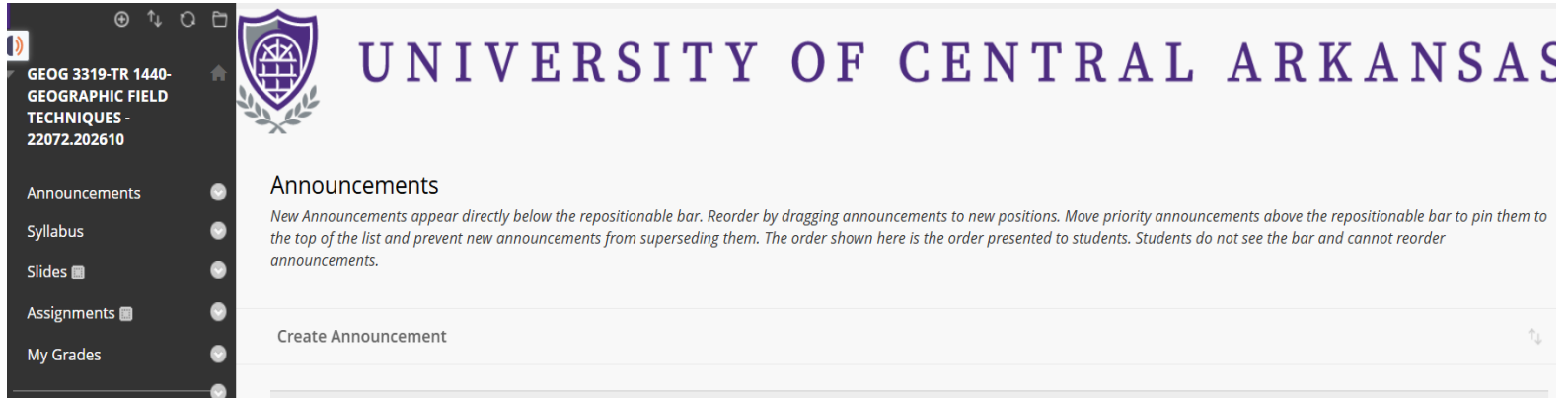
✓ Office Hour:

- MW 10:00-11:50 am

✓ Email: ywu@uca.edu

Course overview and expectations

- Place for slides, and submitting lab exercise



**GEOG 3319-TR 1440-
GEOGRAPHIC FIELD
TECHNIQUES -
22072.202610**

UNIVERSITY OF CENTRAL ARKANSAS

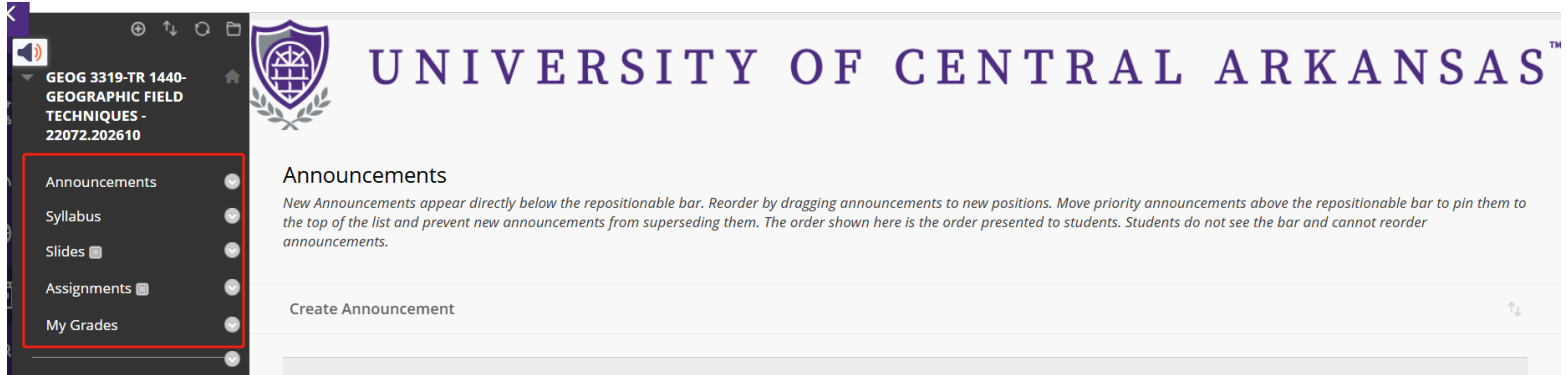
Announcements

New Announcements appear directly below the repositionable bar. Reorder by dragging announcements to new positions. Move priority announcements above the repositionable bar to pin them to the top of the list and prevent new announcements from superseding them. The order shown here is the order presented to students. Students do not see the bar and cannot reorder announcements.

Create Announcement

Course overview and expectations

- Place for slides, and submitting lab exercise



The screenshot displays the LMS interface for the University of Central Arkansas. On the left, a dark sidebar contains a navigation menu with the following items: 'Announcements' (highlighted with a red box), 'Syllabus', 'Slides', 'Assignments', and 'My Grades'. The main content area features the university's logo and name at the top. Below this, the 'Announcements' section is active, showing a heading and a paragraph of text explaining how announcements are managed. At the bottom of this section is a 'Create Announcement' button with a small upward arrow icon.

**GEOG 3319-TR 1440-
GEOGRAPHIC FIELD
TECHNIQUES -
22072.202610**

UNIVERSITY OF CENTRAL ARKANSAS™

Announcements

New Announcements appear directly below the repositionable bar. Reorder by dragging announcements to new positions. Move priority announcements above the repositionable bar to pin them to the top of the list and prevent new announcements from superseding them. The order shown here is the order presented to students. Students do not see the bar and cannot reorder announcements.

Create Announcement

Software

- ArcGIS Pro installed on Mac/other computer

Mac

ESRI <https://pro.arcgis.com/en/pro-app/latest/get-started/run-pro-on-a-mac.htm>

Harvard

<https://gis.harvard.edu/faq/how-installing-arcgis-desktop-or-pro-mac-computer>

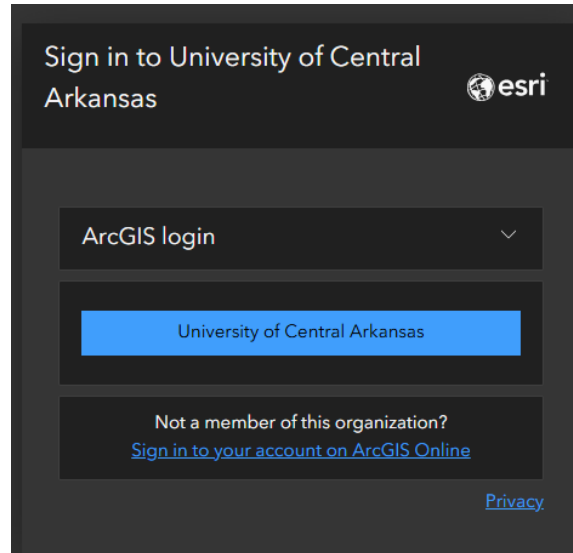
Other PCs (e.g., Chromebook, Microsoft surface)

Please talk with/email to me

Software – ArcGIS Online

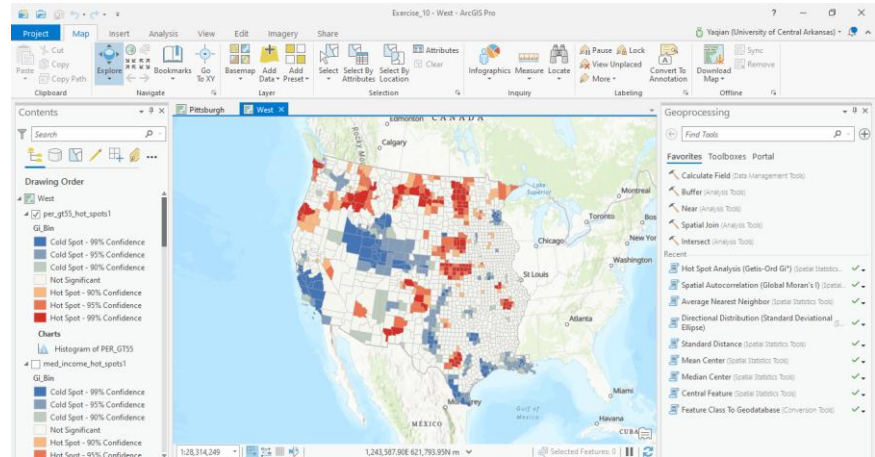
- ArcGIS Online

- ✓ Log in ArcGIS online <https://uca.edu/geography/gis/>



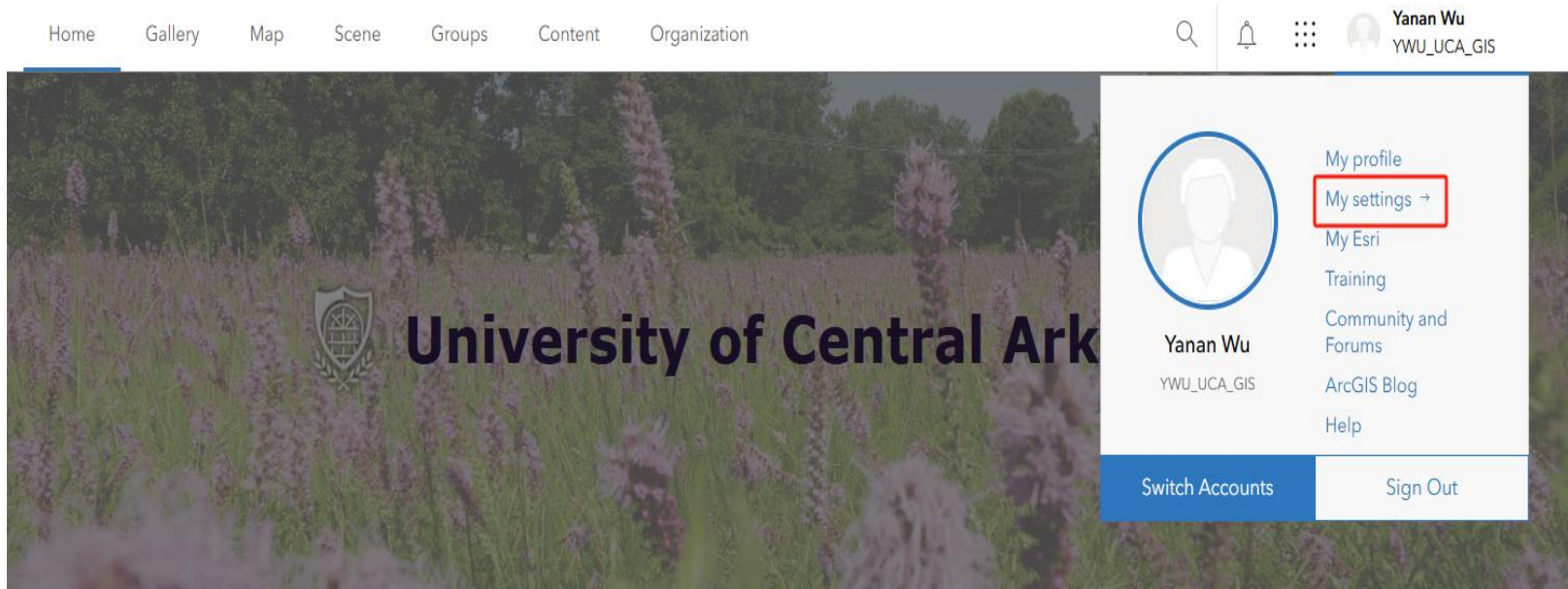
Software – ArcGIS Pro

○ ESRI ArcGIS Pro



Software

- ArcGIS Pro installed in your own PC



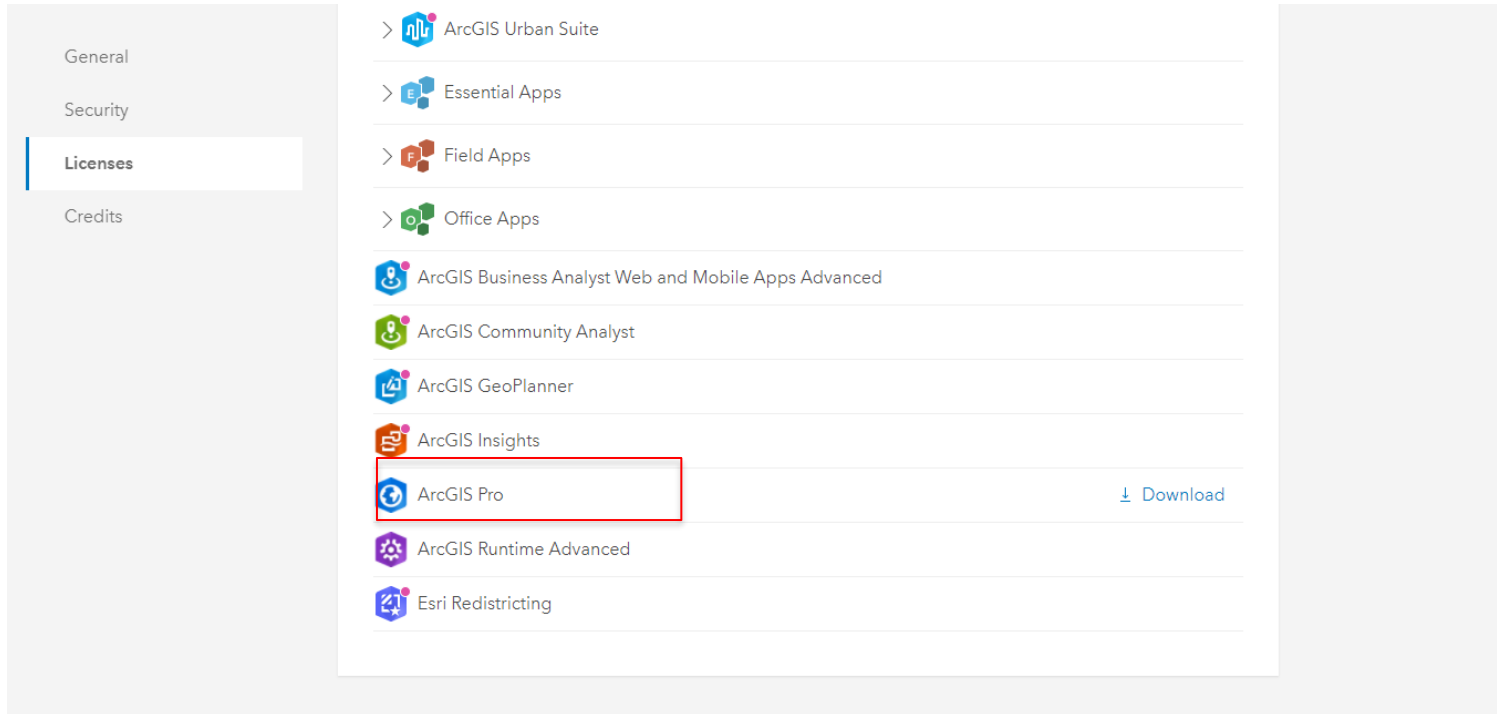
Software

○ ArcGIS Pro installed in your own PC

The screenshot displays the ArcGIS Pro user interface. At the top, a navigation bar includes links for Home, Gallery, Map, Scene, Groups, Content, and Organization. On the right side of this bar are icons for search, notifications, a settings menu, and a user profile for Yanan Wu (YWU_UCA_GIS). Below the navigation bar is a blue header for 'My settings'. On the left, a sidebar menu shows 'General', 'Licenses' (which is highlighted with a red rectangle), and 'Credits'. The main content area is titled 'Licenses' and features a search bar for 'Licensed products'. Below this, a list of licenses is shown, including 'Essential Apps', 'Field Apps', 'Office Apps', 'ArcGIS Business Analyst Web and Mobile Apps', 'ArcGIS Business Analyst Web App Standard and Mobile', and 'ArcGIS CityEngine'. An 'Add-on license' link is visible in the top right of the license list area.

Software

○ ArcGIS Pro installed in your own PC



ArcGIS online account

○ ArcGIS Pro

ArcGIS Sign In

ArcGIS Pro wants to access your ArcGIS Online account information ?

Sign in

esri

ArcGIS login

Your ArcGIS organization's URL

UCA-GIS

.maps.arcgis.com

☐ Remember this URL

Continue

Privacy

☒ Sign in automatically

Configure Licensing

Sign In Using Browser

ArcGIS Pro

Home

Learning Resources

Settings

New Project

Map

Catalog

Global Scene

Local Scene

Start without a template

Recent Projects

Find

arcgis_pro_project

D:\Teaching_Clark\GISRepo\Spring2025\large_file\Statistics\lab\lab05\Arcident_1510\arcgis_pro_project.aprx

3/8/2025 10:38 PM

lab05_ArcGISPro

D:\Teaching_Clark\GISRepo\Spring2025\large_file\Statistics\lab\lab05\lab05_ArcGISPro\lab05_ArcGISPro.aprx

3/6/2025 4:23 PM

GISProject

D:\Teaching_Clark\GISRepo\GIS\GISProject\GISProject.aprx

1/4/2025 11:07 AM

MyProject1

C:\Users\j00021\Documents\ArcGIS\Projects\MyProject1\MyProject1.aprx

12/27/2024 6:58 PM

ZIP_ma

D:\Teaching_Clark\Week05_arcpy\Week05_arcpy_zip_M4\ZIP_ma.aprx

MyProject

C:\Users\j00021\Documents\ArcGIS\Projects\MyProject\MyProject.aprx

9/20/2024 4:11 PM

Open another project

Recent Templates

Learn more about creating project templates

Start with another template

Yvan

Yvan - University of Central Arkansas

Sign out

<https://www.arcgis.com/>

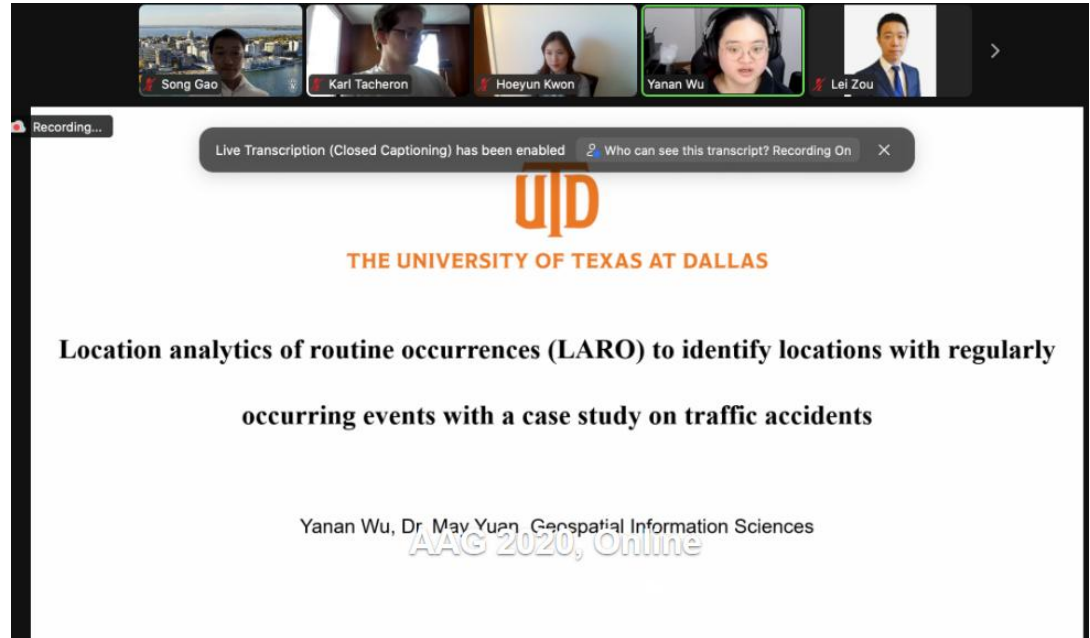
Conference

- Arkansas GIS Users Forum
- SWAAG Conference
 - Student Competition
 - Geobowl



Conference

- AAG Conference
 - Awards and grants



The screenshot shows a Zoom meeting interface. At the top, there is a row of five participant video thumbnails: Song Gao, Karl Tacheron, Hoeyun Kwon, Yanan Wu (highlighted with a green border), and Lei Zou. Below the thumbnails, a status bar indicates "Recording..." and "Live Transcription (Closed Captioning) has been enabled". The main content area displays a presentation slide from The University of Texas at Dallas. The slide features the university's logo (UTD) and the text "THE UNIVERSITY OF TEXAS AT DALLAS". The title of the presentation is "Location analytics of routine occurrences (LARO) to identify locations with regularly occurring events with a case study on traffic accidents". At the bottom of the slide, the presenter's name "Yanan Wu, Dr. May Yuan, Geospatial Information Sciences" is listed. A watermark "AAG 2020, Online" is visible in the bottom right corner of the slide.

Recording...

Live Transcription (Closed Captioning) has been enabled Who can see this transcript? Recording On

UTD
THE UNIVERSITY OF TEXAS AT DALLAS

Location analytics of routine occurrences (LARO) to identify locations with regularly occurring events with a case study on traffic accidents

Yanan Wu, Dr. May Yuan, Geospatial Information Sciences

AAG 2020, Online

Thank you!