# RASOOL VAHID (HE/HIM)

Ph.D. | GIS & Environmental Data Analyst
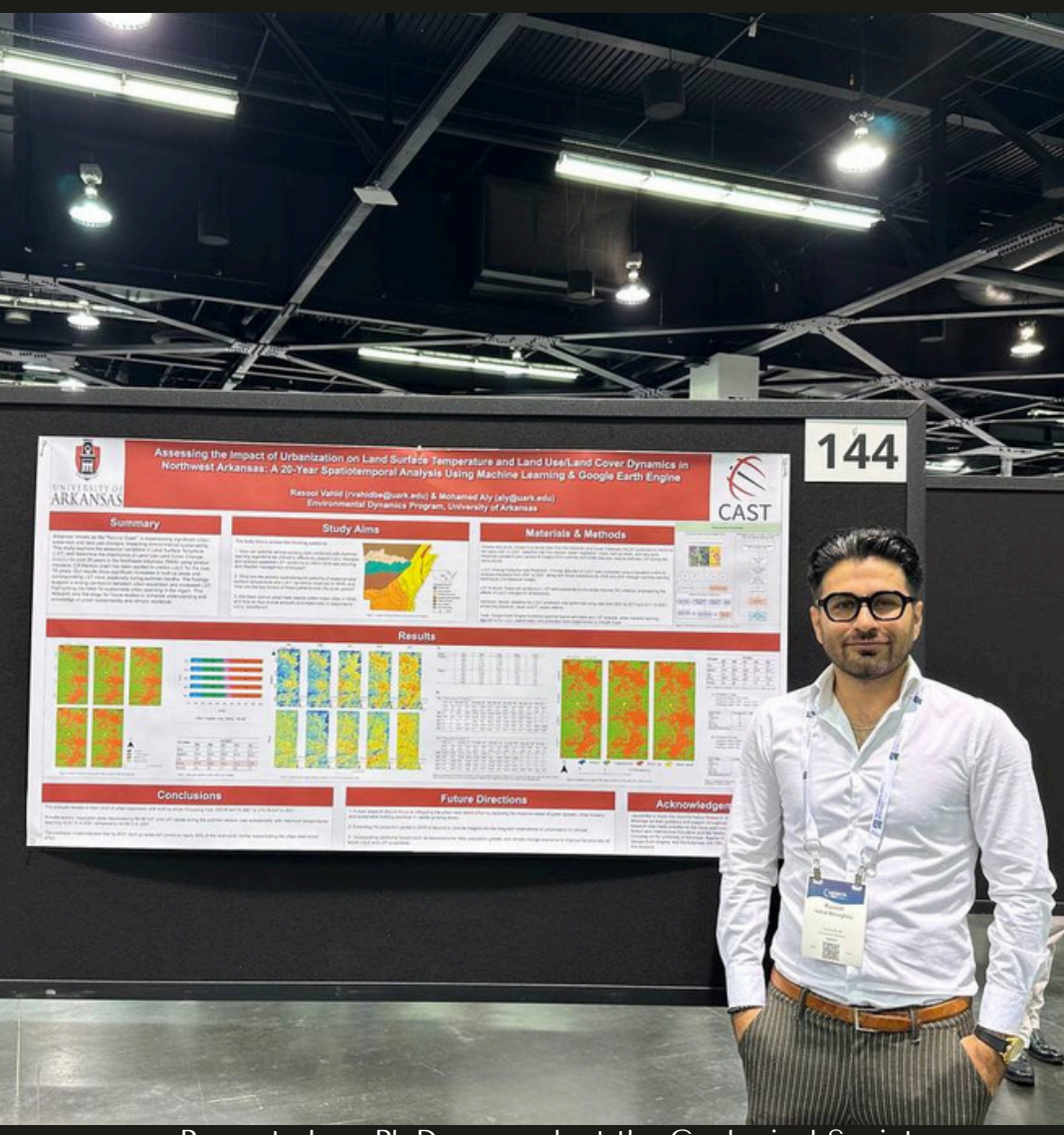
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## About Me

I'm Rasool Vahid, a Ph.D. candidate in Environmental Dynamics at the University of Arkansas with a strong focus on geospatial analysis, environmental modeling, and data science. Over the past four years, I've taught and developed university-level courses like Spatial Analysis Using ArcGIS Pro and Introduction to Geodatabase, combining technical precision with a hands-on, student-centered teaching style. My research investigates how land use and climate change influence land surface temperatures, using tools like Python, ArcGIS, remote sensing, and machine learning.

With experience in both applied research and public-facing projects, I'm passionate about transforming complex environmental data into meaningful insights that inform sustainability, urban planning, and climate adaptation. Whether I'm creating interactive GIS dashboards, developing predictive models, or mentoring students, I'm driven by a deep commitment to spatial thinking and problem-solving.

Resume | Portfolio | in

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## 2021-present



Presented my Ph.D. research at the Geological Society of America Conference (July 2024).

## GIS and Environmental Applications

1. **Land Cover Change and Urban Heat Mapping in Arkansas**
   Overview: Developed a spatial model to assess the impact of urban expansion on land surface temperatures (LST) using Landsat data, ArcGIS Pro, and Python. Analyzed temporal land use/land cover changes from 2001 to 2021 across urban centers in Arkansas and projected LULC/LST dynamics over the next two decades.
   Tools Used: Python (Rasterio, GeoPandas) · ArcGIS Pro · Model-Builder · ArcGIS Online . Microsoft Excel
   Outcome: Identified significant urban heat zones linked to impervious surface expansion. Projections suggest a 1.5—2.2°C increase in average LST in key zones by 2045. Results contributed to two Q1 journal articles and informed regional planning recommendations.

2. **Data Collection for Water, Oil and Gas Wells with AmericaView**
   Overview: As a GIS Intern, I maintained and updated versioned GIS databases related to water, oil, and gas wells. Created dynamic dashboards and utility maps for environmental monitoring.
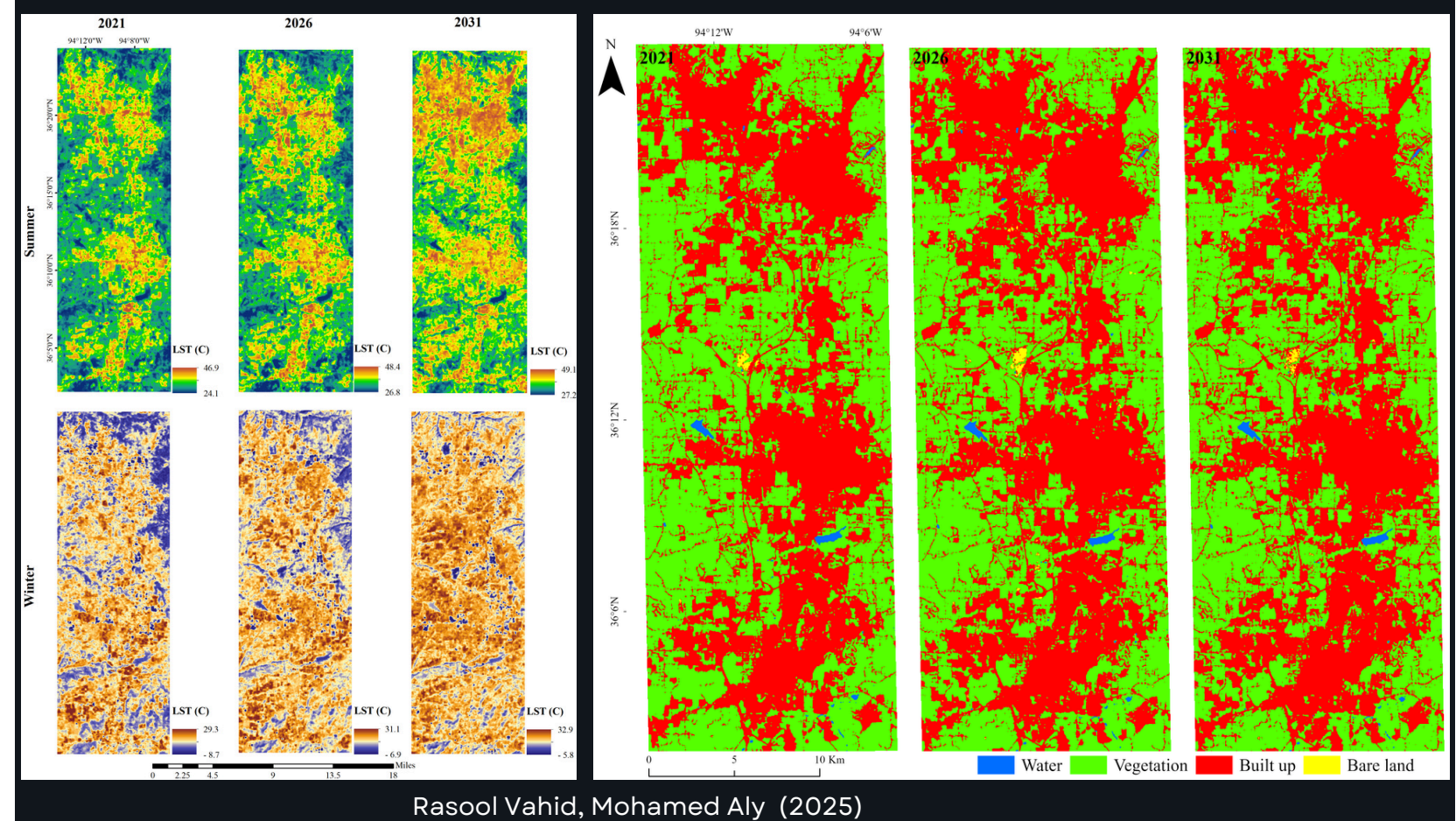   Tools Used: ArcGIS Pro · ArcGIS Online · StoryMaps · Dashboard · Field Maps
   Outcome: Delivered a range of updated geospatial and data visualizations that enhanced infrastructure monitoring and informed planning decisions for state-level partners.

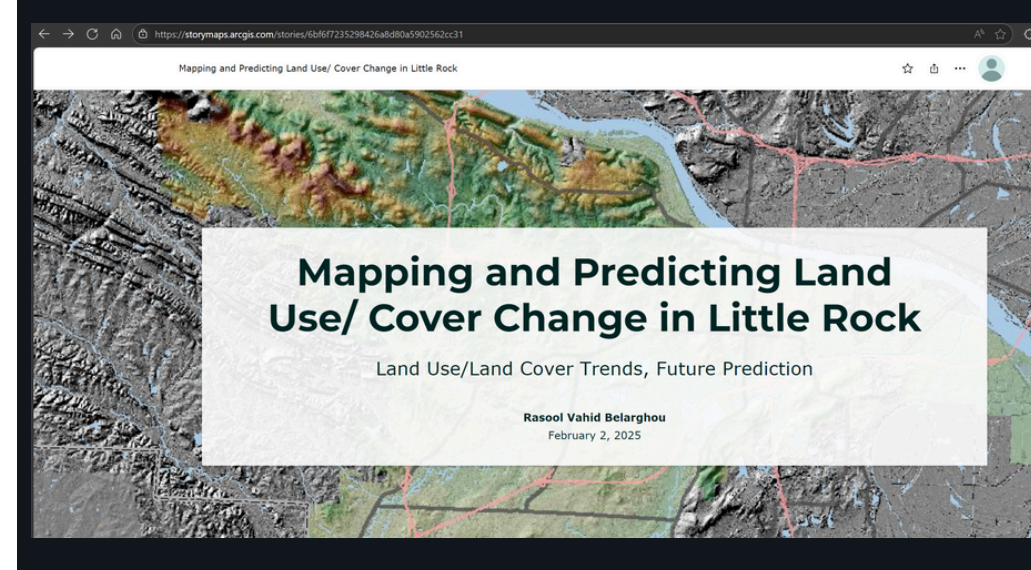3. **Senior Graduate Teaching Assistant for Teaching GIS related courses**
   Overview: Taught the Spatial Analysis Using ArcGIS Pro course for 3 years. Led curriculum development for Introduction to Geodatabases and Spatial Analysis Using ArcGIS Pro. Created custom datasets, lab exercises, and online tutorials.
   Tools Used: Python . ArcGIS Pro · Model-Builder · ArcGIS Online . SQL
   Outcome: Improved course efficiency and engagement across 4 semesters. Received recognition for mentoring and technical support through the University of Arkansas' Geosciences Department. USA
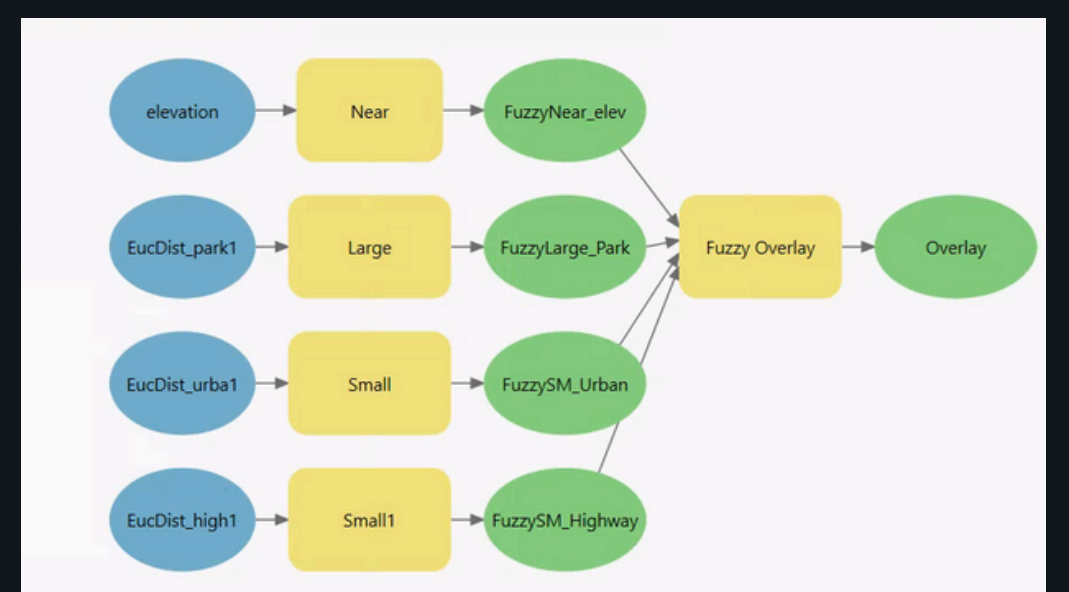
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# Doctoral Project Outcomes

- Published one (Q1) first-author systematic review on machine learning applications in land surface temperature and land use/cover analysis.

- Two additional Ph.D.-based research articles submitted to Geomatics and Urban Climate journals (Q1).



Rasool Vahid, Mohamed Aly (2025)



Interactive StoryMap: Urban Expansion & Land Use Change in Little Rock, Arkansas
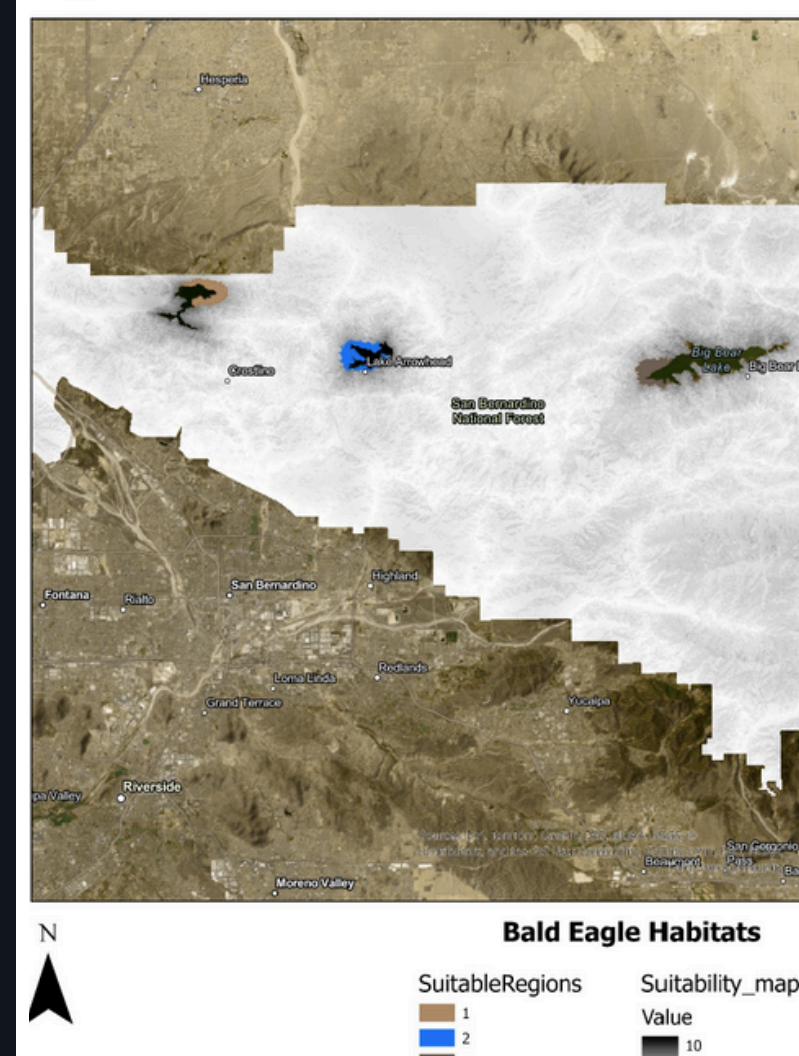
Click to open StoryMap

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# Sample Class Projects



Fuzzy Membership Model for Habitat Suitability (ArcGIS Pro) This model, built using ArcGIS Pro's ModelBuilder, integrates multiple spatial inputs—elevation and Euclidean distances to parks, urban areas, and highways, using fuzzy logic techniques. Each input is transformed using fuzzy membership functions, then combined via a fuzzy overlay to generate a final suitability surface. (2024)
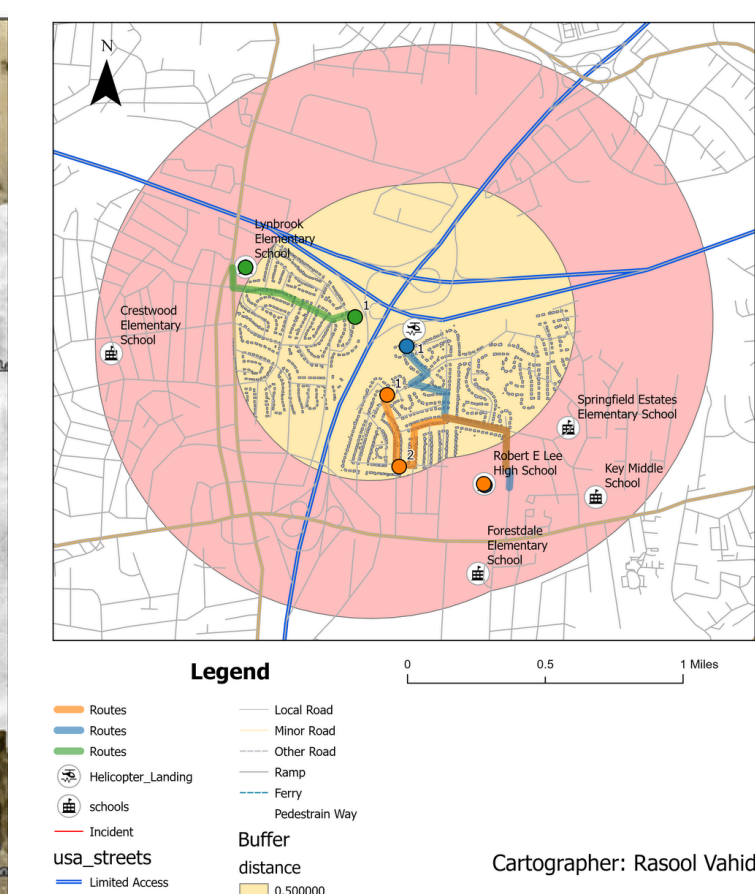


A Weighted Suitability Model for Bald Eagle Habitats (Click on the link for more details)
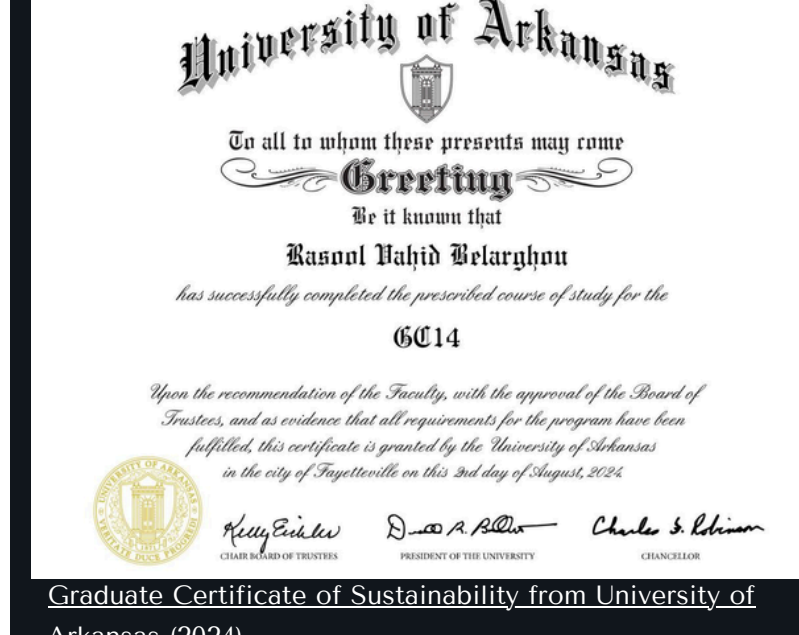


This emergency response map models a simulated incident in Springfield, Virginia, using ArcGIS Pro. It highlights 0.5 and 1-mile buffer zones, school locations, access routes, and landing zones to support evacuation planning and hazard mitigation. Created as part of a GIS emergency decision-making project at the University of Arkansas. (2023)
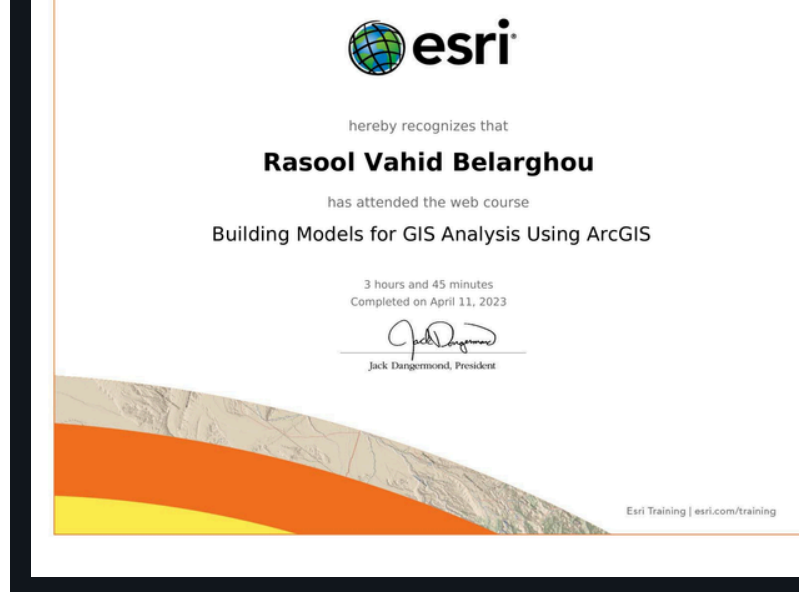
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# Certificates and Awards



The GeoVision Endowed Scholarship (2025)



Graduate Certificate of Sustainability from University of Arkansas (2024)



R Programming Certificate from Udemy (2022)





Some ESRI Training Certificates Earned Between 2022 and 2023.
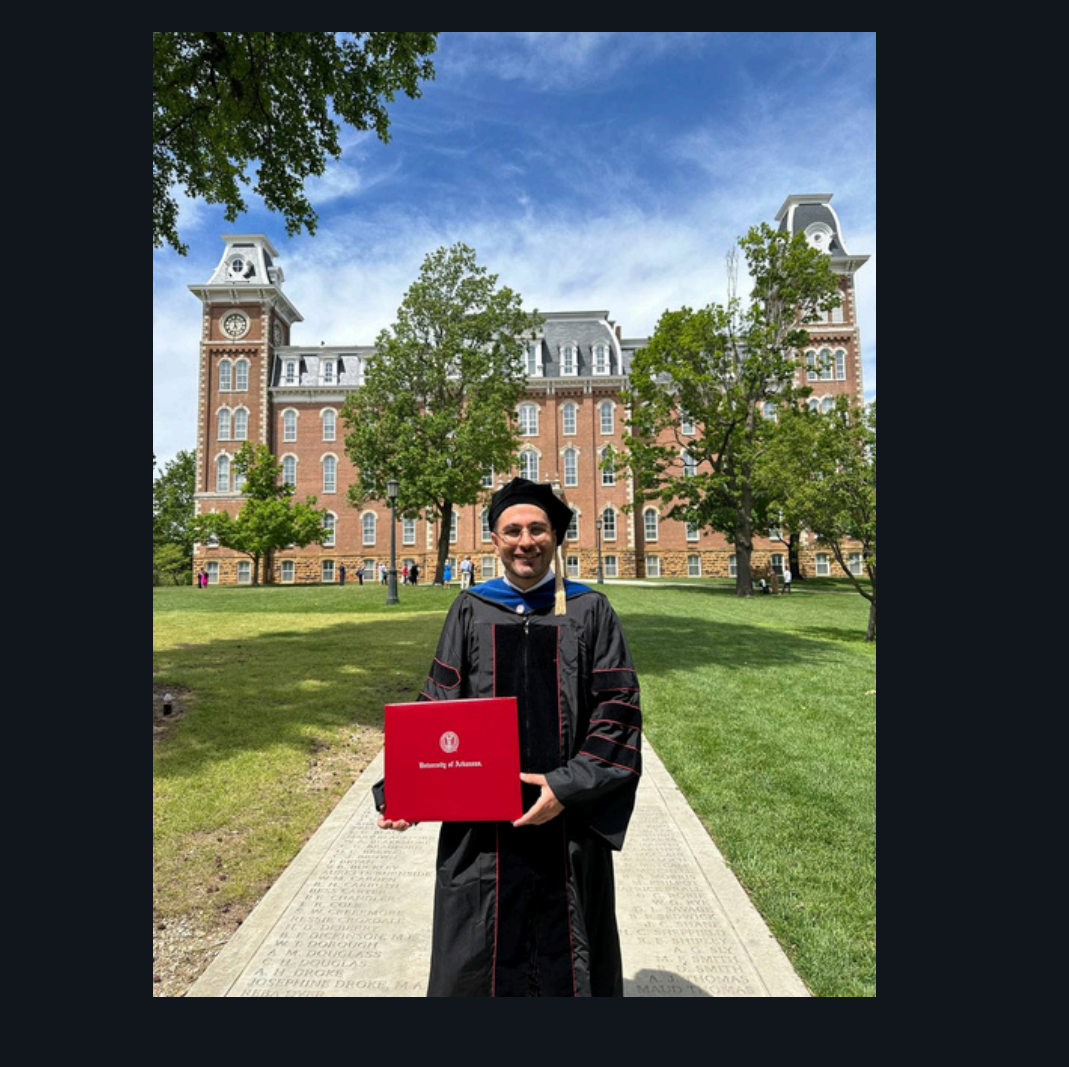To Access all ESRI Certificates Earned, [Click here].
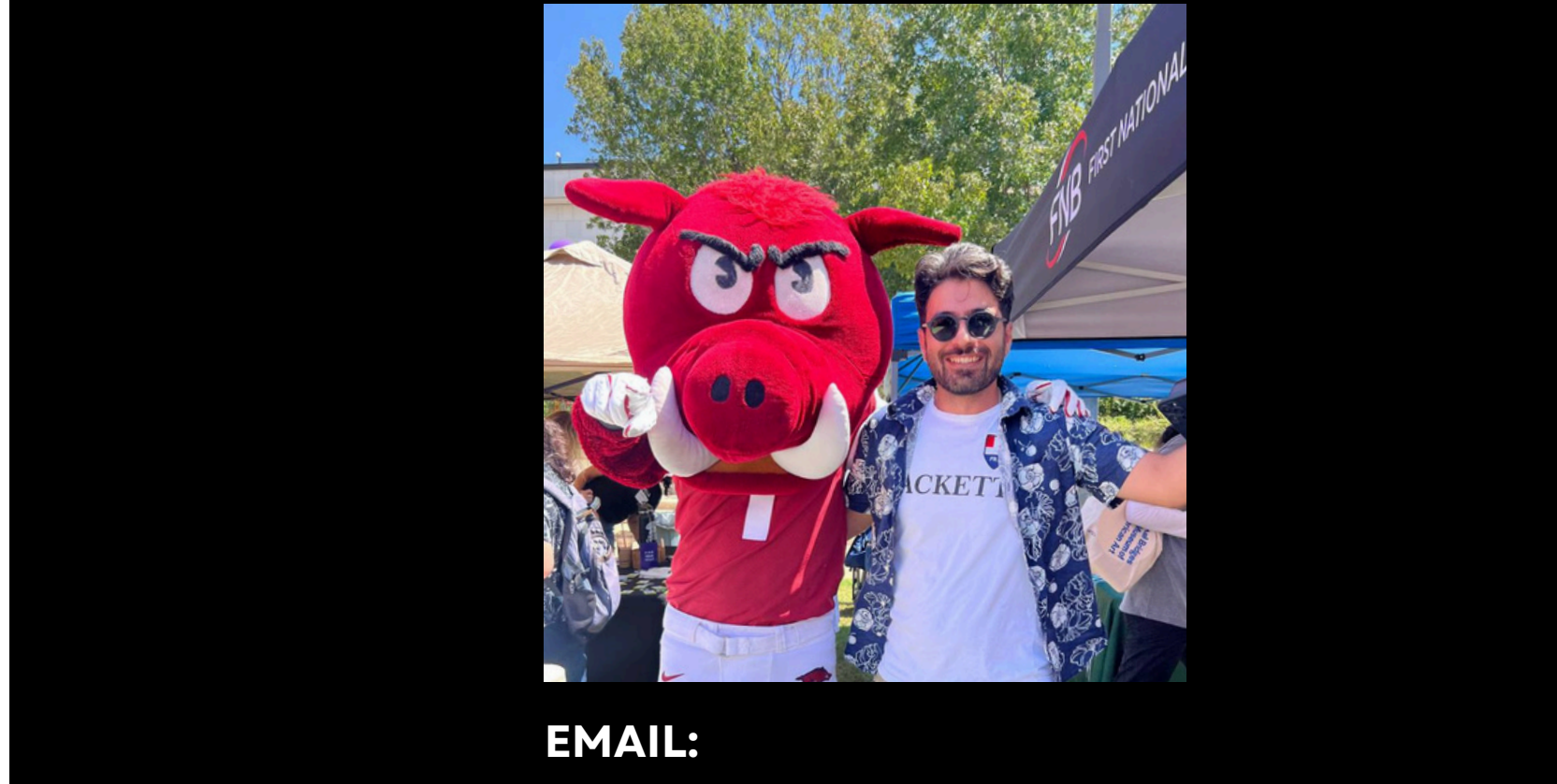
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# Professional References



1. Professor Mohamed Aly
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2. JoAnn Kvamme
   Retired Assistant Director, Environmental Dynamics Program, University of Arkansas
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3. Dr. Abdullah Al Saim
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4. Cay Mathis
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# Contact Me





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