Postdoc Position on Agricultural Irrigation Mapping + Geospatial AI

Expected Start Date: March 1st, 2026 (Negotiable)

Summary: The [XIE (X-Scale Irrigation & Earth Observation) Lab](#) at the University of Oklahoma invites applications for a postdoctoral researcher with strong expertise in remote sensing and machine learning to join our newly funded Re-Analysis of Water for Society (RAWS) project to advance understanding of global water system. The successful candidate will lead research focused on mining multi-source geospatial data (e.g., remote sensing, GIS, and field surveys) to create critical irrigation datasets that support global water analysis and modeling. The postdoctoral researcher will join a collaborative and interdisciplinary team and work closely with international collaborators from the Netherlands, Italy, and the U.S.

Position responsibilities:

- Collect, clean, and harmonize existing global irrigation datasets
- Develop ML methods to produce global irrigation extent and system type maps
- Standardize and pipeline irrigation inputs for use in global water models
- Contribute to hotspot analysis in the Ogallala Aquifer
- Participate in project team meetings and support reporting and coordination activities
- Publish findings in peer-reviewed journals and prepare technical reports and guidelines
- Present results at regional, national, and international conferences and workshops
- Perform other duties as needed (e.g., mentor students, support or lead proposal preparation and submission)

Preferred qualifications:

- PhD in geospatial data science, remote sensing, AI/ML, or a closely related field
- Rich experience working with Google Earth Engine and large geospatial datasets for large-scale agriculture and/or water infrastructure mapping
- Familiarity with agricultural systems, irrigation, water use, and land use.
- Strong oral and written communication skills and the ability to work collaboratively in an interdisciplinary environment
- Demonstrated record of peer-reviewed publications
- Interest in and ability to mentor graduate and undergraduate students

The Department of Geography and Environmental Sustainability at the University of Oklahoma is a vibrant and continuously evolving department with the mission to conduct innovative and socially relevant research. The city of Norman, OK is recognized as one of the best small cities in the U.S., with modest living costs, easy access to metropolises (e.g., Dallas and Oklahoma City), and an inclusive and welcoming environment. For more information: [The Geography Department](#); [City of Norman, OK](#).

To apply, please submit a single PDF containing (1) a cover letter detailing qualifications and interest in this position (2) a current CV, and (3) names and contact information for three professional references to Dr. Yanhua Xie (yanhua.xie@ou.edu), with email subject of "Postdoc: Ag Irrigation". Applications will be reviewed upon submission until the position is filled; note that only qualified candidates will be contacted for interview. The initial appointment is for one year, with strong potential for renewal based on performance.

Department of Geography and Environmental Sustainability
The University of Oklahoma®

Postdoc Position on Land Use/Cover Mapping + Geospatial AI
Expected Start Date: March 1st, 2026 (Negotiable)

Summary: The XIE (X-Scale Irrigation & Earth Observation) Lab at the University of Oklahoma invites applications for a postdoctoral researcher with strong expertise in remote sensing and machine learning to join our newly funded Re-Analysis of Water for Society (RAWS) project to advance modeling of global water system. The successful candidate will lead research focused on mining multi-source geospatial data to create long-term, consistent land use/cover datasets that support global water analysis and modeling. The postdoctoral researcher will join a collaborative and interdisciplinary team and work closely with international collaborators from the Netherlands, Italy, and the U.S.

Position responsibilities:
- Collect, clean, and harmonize existing global land use/cover datasets
- Develop ML methods to generate long-term, consistent global land use/cover maps
- Standardize and pipeline land use inputs for global water models
- Contribute to developing and deploying data dissemination platform
- Participate in project team meetings and support reporting and coordination activities
- Publish findings in peer-reviewed journals and prepare technical reports and guidelines
- Present results at regional, national, and international conferences and workshops
- Perform other duties as needed (e.g., mentor students, support or lead proposal preparation and submission)

Preferred qualifications:
- PhD in geospatial data science, remote sensing, AI/ML, or a closely related field
- Rich experience working with Google Earth Engine and large geospatial datasets for large-scale land use/cover mapping
- Strong oral and written communication skills and the ability to work collaboratively in an interdisciplinary environment
- Demonstrated record of peer-reviewed publications
- Interest in and ability to mentor graduate and undergraduate students

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To apply, please submit a single containing (1) a cover letter detailing qualifications and interest in this position (2) a current CV, and (3) names and contact information for three professional references to Dr. Yanhua Xie (yanhua.xie@ou.edu), with email subject of "Postdoc: Land Use/Cover". Applications will be reviewed upon submission until the position is filled; note that only qualified candidate(s) will be contacted for interview. The initial appointment is for one year, with strong potential for renewal based on performance.

Ph.D. Position on Remote Sensing of Agricultural Land/Water Use
Expected Start Date: August 15th, 2026 (Negotiable)

Summary: The XIE (X-Scale Irrigation & Earth Observation) Lab at the University of Oklahoma invites applications for a fully funded PhD position focused on the development of scalable physics-guided machine learning and remote sensing models to quantify agricultural land and water use. This position is part of the newly funded Re-Analysis of Water for Society (RAWS) initiative, which aims to advance understanding and modeling of global water system. The successful candidate will join an interdisciplinary research group and work closely with water resource agencies, Earth system modelers, and international collaborators in the U.S., the Netherlands, and Italy. The research will emphasize user-centered applications, translating advanced geospatial and AI/ML methods into actionable tools that support water management.

What you will gain:
This PhD position offers a unique opportunity to develop technical expertise, applied research experience, and professional skills:
- Global and interdisciplinary collaboration: Engage in a highly collaborative environment involving international faculty, students, and researchers across hydrology, engineering, remote sensing, agriculture, and Earth system science within the RAWS project
- User-centered application: Work with water management agencies in the Ogallala Aquifer region to develop user-oriented tools and data products for irrigation and water resource management
- Teaching and mentoring experience: Opportunity to teach and mentor undergraduate and graduate students across OU in geography and geospatial science courses
- Scholarly development: Lead and co-author high-impact peer-reviewed publications and present research at national and international conferences

Preferred qualifications:
- A bachelor's degree (with research experience) or a master's degree in remote sensing, geospatial data science, agricultural science, or a closely related field
- Familiarity with agricultural system, irrigation, and water use
- Experience using remote sensing, AI/ML, and Google Earth Engine
- Good oral and written communication skills and the ability to work collaboratively in an interdisciplinary environment

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To apply, please submit a single containing (1) a cover letter detailing qualifications and interest in this position and (2) a current CV to Dr. Yanhua Xie (yanhua.xie@ou.edu), with email subject of "PhD: Ag Land/Water Use". Applications will be reviewed upon submission and only qualified candidate(s) will be encouraged for application.