Title: **Funded PhD Position in Geospatial Artificial Intelligence, Crop Mapping, and Ecosystem Services**

Start date: <u>2025 Fall or later terms</u>

Application deadline: <u>December 31, 2024</u>

Organization: University of Florida

Location: Gainesville, Florida, USA

Email Address: changzhao@ufl.edu

Job Description:

Dr. Zhao's lab in the UF/IFAS Agronomy Department at the University of Florida is seeking a highly creative and motivated PhD student in the areas of **Geospatial Artificial Intelligence, Crop Mapping, and Ecosystem Services**. The successful candidates will conduct interdisciplinary research that integrates geospatial analysis with artificial intelligence for crop mapping and ecosystem services modeling. Research topics include but are not limited to:

- Linking in-situ ground observations, GIS, remote sensing with AI methods (e.g., deep learning such as convolutional neural networks) to map crop types and ecosystem services across landscapes.
- Develop web GIS and decision support tools related to land use, land management, and ecosystem services to inform cropping system resource management.

The candidate is expected to conduct independent research, author peer-reviewed publications, engage in outreach activities, and present research results at professional conferences. The successful candidate will work in a multidisciplinary environment among a team of faculty, postdoc, data analyst, and graduate students across a variety of fields, including Agronomy, Soil, Water and Ecosystem Sciences, Geography, Ecology, Electrical and Computer Engineering. The position offers a competitive stipend, a tuition waiver, and subsidized health insurance.

Required Qualifications:

- Relevant Master's degree (e.g., computer science, agricultural engineering, geoinformatics, geography, or closely related fields)
- Solid backgrounds in Geographical Information Sciences, satellite remote sensing and machine learning.
- Strong motivation, work ethics and the ability to work independently.
- Strong interest in deep learning, with ability to adapt to new AI technologies and learn new AI tools.
- Proficiency with one or more scientific programming languages (e.g., Python, R).
- Excellent written and oral communication skills in English (non-native English speakers please check for TOEFL/IELTS requirements).

Desired Skills:

- Research experience in Satellite remote sensing data processing (e.g., Sentinel2, Landsat, Planetscope etc.).
- Familiar with deep learning library (e.g., PyTorch, Tensorflow, Keras).
- Proficiency with cloud computing, analyzing Earth Observation data, and geospatial modelling (e.g., Google Earth Engine, ArcGIS Pro, Web GIS development with R Shiny, ArcGIS Online, ArcPy, ArcGIS API for Python, QGIS).

Candidates with prior research or work experience with **land use and land cover or crop mapping using satellite remote sensing and deep learning** are strongly encouraged to apply.

Application:

If you are interested, please email Dr. Chang Zhao (changzhao@ufl.edu) with all materials that includes:
- Your most recent CV
- A short (1-2 page) research statement about your skills and experience in geospatial artificial intelligence
- Unofficial undergraduate and graduate transcripts
- Contact information of three references

Please use the email title "Inquiry about PhD AI, Crop Mapping, and Ecosystem Services". Applications will be reviewed continuously as they arrive. Shortlisted candidates will be contacted and interviewed virtually in a timely manner. The selected candidate is required to submit a formal application to the University of Florida Graduate Program.

About Us:
The PhD student will join the Geospatial Artificial Intelligence and Ecosystem Services lab led by Dr. Chang Zhao. Dr. Zhao is an assistant professor in the Agronomy Department, UF/IFAS, and leads an interdisciplinary research team affiliated with the Department of Geography, School of Natural Resources and Environment, and Global Food Systems Institute. Our students and staff are encouraged to pursue multidisciplinary coursework and engage with diverse interdisciplinary experts in social, environmental, and economic disciplines. The School of Natural Resources and Environment offers nationally and internationally recognized Ph.D. programs in Interdisciplinary Ecology, and the Agronomy Department offers Ph.D. programs in Ecology and Statistical Methods Specialization.

University Overview:

The University of Florida is a Land-Grant, Sea-Grant, and Space-Grant institution, encompassing virtually all academic and professional disciplines, with an enrollment of more than 56,000 students. UF is a member of the Association of American Universities. According to the 2024 U.S. News and World Report, the University of Florida tied for 28th best overall among national universities and tied for 6th overall for public university in the United States. In addition, agricultural sciences at UF/IFAS are ranked as No. 4 in the U.S. and No. 18 in the world. Recently, the University of Florida launched a $1 billion initiative to establish itself as one of the country's most preeminent institutions of higher education in artificial intelligence. In 2021, the University of Florida announced a $70 million artificial intelligence partnership with NVIDIA, the partnership will be central to University of Florida's vision to be a national leader in the application of AI, including an expansive plan to elevate its reach and impact in research, teaching, and economic development. UF/IFAS researchers continue to lead the development of AI technologies for agriculture and natural resources. A planned 19,000-square-foot AI hub at the Gulf Coast Research and Education Center will serve as a world-class research, extension, and development facility.