SAVANNA INSTITUTE

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Job opening:
Imagery Analyst (Agricultural / Ecological)

Hours: Full-time
Location: Flexible
Posted: May 22, 2023
Salary: $75,000-$90,000
Deadline: Open until filled, with applications reviewed on a rolling basis

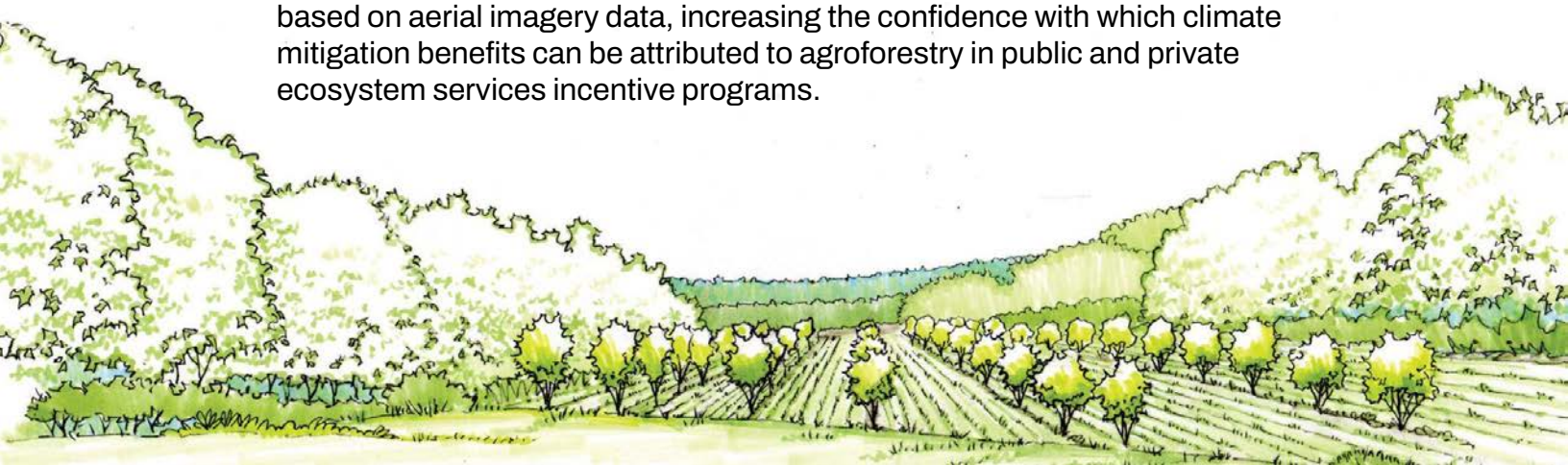
Who we are

The Savanna Institute, a nonprofit organization based in Madison, WI and Champaign, IL, works with farmers, businesses, and scientists to lay the groundwork for widespread agroforestry – the intentional integration of tree crops with other agricultural crops and livestock – in the Midwest US. Inspired by the native savanna ecosystems that once covered much of this region, we envision a transformed agricultural system, centered on trees and other perennial crops, that fosters ecological resilience, climate stability, economic prosperity, and vibrant, equitable communities. For more information, please visit savannainstitute.org.

The job

There is major potential for the expansion of agroforestry systems in the coming years and decades, and our research team is working to prepare the improved tree crop varieties, better agroforestry practices, and refined ecosystem services estimates needed to support this scale-up. Digital imagery analysis, using a diversity of imagery types, methods, and scales, is fundamental to our plans. The Imagery Analyst will:

- With our plant breeding and genetics researchers, develop and implement scalable phenotyping protocols for assessing individual tree and shrub plants for target breeding objectives (e.g. object detection for yield, biomass estimation, phenology and disease assessment). Protocols will be applied to imagery data we are collecting from drone- and ground-mounted cameras, from large breeding populations we have assembled at our research stations for several key tree crops, and will speed development of resilient, productive new tree crop varieties.
- With our ecosystem services researcher, develop more accurate and scalable protocols to estimate carbon sequestration in above-ground tree crop biomass based on aerial imagery data, increasing the confidence with which climate mitigation benefits can be attributed to agroforestry in public and private ecosystem services incentive programs.



- With our agronomy and agroecology research program, apply methods such as those described above to create protocols for using imagery data as a substitute or supplement to traditional hands-on measurements for relating tree crop yield and plant health to specific elements of agroforestry systems design and crop management practices.
- While the primary emphasis of this position will be the analysis of UAS/drone-acquired imagery to detect and measure individual plant features for the applications above, candidates with appropriate skills and interests may optionally also collaborate with our landscape ecologist, helping develop pipelines to detect landscape features (e.g. riparian areas, windbreaks, etc.) from satellite imagery. This work helps refine crop suitability mapping, improving the targeting of new agroforestry production acres.

Who you are

We're looking for a scientist who believes in our mission, is interested in working to further the plant science applications described above, and has:

- Familiarity with integration of machine learning, image classification and segmentation, and GIS to digital imagery, preferably for agricultural, ecological and/or biological datasets
- High proficiency in use of computer vision packages (e.g. OpenCV, TensorFlow, ScikitLearn, Keras, GDAL, Pandas/Geopandas) and related software (e.g., Trimble eCognition, ENVI, Agisoft/PIX4D, ArcGIS/QGIS, R)
- Experience with remote sensing data types (e.g., multi-spectral, hyperspectral, LiDAR, structure from motion photogrammetry)
- Experience in applying theory to practice in imagery analysis. While this is often gained through a MS or PhD in image analysis, data analysis, machine / computer vision, or a related field, if you can demonstrate these skills in some other way, having a degree is optional.

Job details

- This position reports to the Director of Research & Commercialization.
- This is a full-time position with a salary range of $75,000-$90,000 per year.
- This position is eligible for the Savanna Institute's benefits package. Benefits for full-time employees include 30 days paid time off per year, a Health Reimbursement arrangement that can be applied to insurance premiums and approved healthcare costs, a dependent care reimbursement arrangement, and a monthly home office stipend.
- Location is flexible, but the ability to occasionally travel to field sites in the Midwest is preferred.

- While most Savanna Institute employees work remotely, access may be available to shared workspace in our Madison, WI; Spring Green, WI; and Champaign, IL offices.
- A start date of summer or fall 2023 is preferred, but can be adjusted if necessary

How to apply

If you're excited about this job, we're excited to learn about your skills and experience! To apply, please submit a cover letter, a resume/CV, and three professional references to jobs@savannainstitute.org. Position will remain open until filled, with applications reviewed on a rolling basis.

Questions?

Email Kathleen Fitzgibbon, Operations Manager, kathleen@savannainstitute.org.

Diversity commitment

The Savanna Institute affirms the value of diversity of staff and stakeholders, and aims to foster inclusive environments and equitable outcomes of our work. We seek individuals who are committed to these goals.

Equal Employment Opportunity

Equal Opportunity is and shall be provided for all employees and applicants for employment on the basis of their demonstrated ability and competence without unlawful discrimination on the basis of their race, color, national origin, ancestry, religion, sex, pregnancy, sexual orientation, gender identity, gender expression, age, disability, veteran status, or any other status protected by applicable state or federal law.

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