

## Quantitative Forest Ecology Graduate Research Assistantship (Ph.D. and/or MSc level)

Forest Advanced Computing & Artificial Intelligence Laboratory (FACAI)  
Department of Forestry and Natural Resources, Purdue University

**Background: Forest Advanced Computing and Artificial Intelligence (FACAI) Laboratory-** As a **Global Forest Biodiversity Initiative (GFBI)** continental center of research, education, and public outreach for North America, FACAI Lab employs the paradigm of Artificial Intelligence (AI) encompassing different state-of-the-art machine learning and statistical methods to study global, regional, and local forest resource management and biodiversity conservation.

FACAI are compiling the first global ground-sourced forest inventory database (GFBI) for worldwide economic and ecological research projects. FACAI have 256G-RAM nodes at the **Rosen Center for Advanced Computing**, the research computing arm of Information Technology at Purdue (ITaP), the University's central IT organization, and have access to 3-Tb storage space at Purdue Data Depot, a high-capacity, fast, reliable and secure data storage service designed, configured and operated for the needs of Purdue researchers in any field and shareable with both on-campus and off-campus collaborators.

Jingjing Liang, an Assistant Professor of Quantitative Forest Ecology, has co-founded the Global Forest Biodiversity Initiative (GFBI) and developed the first comprehensive global forest inventory database GFBI with more than 1.3 million sample plots. As a co-chair of the FACAI Lab, Dr. Liang has been working on connecting machine learning and big data in studying fundamental questions in biodiversity and ecosystem processes, ecological and socioeconomic impacts of biological conservation. A strong advocate of open data in global forest research, Liang has served the scientific community with data and data products, as well as high-impact research discoveries on the world's forest resources and their conservation.



Some of featured publications of FACAI:

-Liang, J. and J. G. P. Gamarra. 2020. The importance of sharing global forest data in a world of crises. *Scientific Data* 7:424.

-Luo, W., H. S. Kim, X. Zhao, D. Ryu, I. Jung, H. Cho, N. Harris, S. Ghosh, C. Zhang, and J. Liang. 2020. New forest biomass carbon stock estimates in Northeast Asia based on multisource data. *Global Change Biology* doi: 10.1111/gcb.15376.

-Steidinger, B. S., T. W. Crowther, J. Liang, M. E. Van Nuland, G. D. A. Werner, P. B. Reich, G. Nabuurs, S. de-Miguel, M. Zhou, N. Picard, B. Herault, X. Zhao, C. Zhang, D. Routh, and GFBI consortium. 2019. Climatic controls of decomposition drive the global biogeography of forest-tree symbioses. *Nature* **569**:404-408.

-Liang, J., T. W. Crowther, N. Picard, S. Wiser, M. Zhou, and GFBI Consortium. 2016. Positive biodiversity-productivity relationship predominant in global forests. *Science* **354**.

**Qualifications:**

A B.S. is required and a M.S. in ecology, biology, forestry, computer science, or statistics is preferred. Passion for path-making research is a must.

Strong quantitative skills and oral and writing proficiency are desired. Fieldwork experience and/or data analytics background are preferred.

**Salary and Benefits:**

For GRA positions, the incumbents' initial academic-year ("AY") salary will be ~\$20,000 (MSc) or \$23,000 (PhD). Ph.D. assistantships with tuition waiver are funded up to three years, contingent upon satisfactory annual performance and availability of funding. A fourth year of support also may be possible. M.S. assistantships with tuition waiver are funded up to two years, contingent upon satisfactory annual performance and availability of funding. In addition, Purdue University provides a generous fringe benefit package.

**Application:** Applications are now accepted on a rolling basis.

A pdf file containing the applicant's CV, transcripts, GRE score, contact information of three references, and personal statement/plan of study should be sent to the email address listed below. Requirements for admission to the Graduate Program of the Department of Forestry and Natural Resources can be found at the following link:

<https://www.purdue.edu/gradschool/prospective/gradrequirements/westlafayette/fnr.html>.

For more information, visit: <https://ag.purdue.edu/fnr/Pages/GraduateStudiesFNR.aspx>

**Contact:**

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Visit us at Forest Advanced Computing & Artificial Intelligence Laboratory (FACAI)  
<https://aq.purdue.edu/facai/>

*Purdue University is an EEO/AA employer. All individuals, including minorities, women, individuals with disabilities, and veterans are encouraged to apply.*