



Postdoctoral fellowship at UIUC: Ecosystem Remote Sensing and Modeling

Two Postdoctoral Researcher Positions in the [Department of Natural Resources and Environmental Sciences \(NRES\)](#) and [National Center for Supercomputing Applications \(NCSA\)](#) at the University of Illinois at Urbana-Champaign (UIUC), full-time, 100% (1-year duration, with possibility of annual extension, contingent upon performance and funding).

Summary: The successful candidates will work on research projects broadly related to ecosystem modeling and remote sensing for the U.S. Midwestern agroecosystem. The ultimate goal of these projects is to advance sustainable agriculture under climate change and land use intensification. The projects will directly help improve the predictability of agricultural production and ecosystem services of the U.S. Corn Belt, which currently produces ~30% of the world's corn and soybeans, respectively. The candidate will use multi-source satellite and airborne remote sensing, advanced process-based modeling, deep learning, and model-data fusion to achieve the above goals.

Specific responsibilities include: designing and implementing automatic computing pipelines for satellite/airborne-related remote sensing algorithms for monitoring crop growth condition and productivity at a high spatial resolution ($\leq 30\text{m}$) and over large areas; improving process-based ecosystem models by developing new modules, calibration, and model-data fusion; building operational systems for agricultural monitoring and modeling over the U.S. Corn Belt; preparing peer-reviewed publications and education materials; managing projects and reporting; and communicating research at professional meetings.

The successful applicant will be working with a team of scientists in the domain of quantitative remote sensing and modeling for agroecosystems, led by Dr. Kaiyu Guan in UIUC (<http://faculty.nres.illinois.edu/~kaiyuguan/>).

Qualifications: Applicants should have a Ph.D. on remote sensing, earth and atmospheric science, meteorology, hydrology, environmental engineering, computer science, physics, mathematics, or a closely related field. Prior research experiences in ecosystem remote sensing and modeling are highly preferred. Strong programming skills (e.g., Python, C/C++, and/or Fortran in the Linux environment) and prior experience in supercomputing or big data analytical systems is **required**, as the applicant will be working routinely in the supercomputer environment. Candidates will be considered if graduation with a Ph.D. is expected by the targeted starting date. Proficiency in spoken/written English is mandatory. The appointment is renewed annually, contingent upon the performance. Salary is competitive and commensurate with experience in relevant research.

Starting Date: Ideal starting window ranges from **August 15, 2020 to Jan 1, 2021**, and prefer to start as soon as possible. The position is open till filled.

Application Process: To ensure full consideration, qualified candidates must send a cover letter, CV, and contact information of three references via email to linxin@illinois.edu. All requested information must be submitted to the above email in order for your application to be considered. Incomplete applications will not be reviewed. Qualified applicants will be immediately reviewed upon receiving the application while the search may continue until the position is filled. We will only give feedback to those candidates that we plan to interview. For further information, please contact: Dr. Kaiyu Guan (kaiyug@illinois.edu).

The University of Illinois is an Affirmative Action/Equal Opportunity Employer. The administration, faculty, and staff embrace diversity and are committed to attracting qualified candidates who also embrace and value diversity and inclusivity. Visit www.inclusiveillinois.illinois.edu. **International scholars have flexibility to conduct research remotely considering the COVID-19 situation.**



Fully-supported PhD student(s) at UIUC in Hydrological and Biogeochemistry Modeling and Hyperspectral Remote Sensing

We have two openings for full-funded PhD students at the [University of Illinois at Urbana-Champaign](#). Funding up to five years is guaranteed for well-qualified candidates through competitive fellowship, research-assistant, and/or teaching-assistant. **We accept students at any time of a year, not confined to only fall semester.**

Information about the Dr. Guan's lab can be found at: <http://faculty.nres.illinois.edu/~kaiyuguan/>. Dr. Guan is a Blue Waters Professor in ecohydrology and remote sensing in the [Department of Natural Resources and Environmental Sciences](#) and [National Center for Supercomputing Applications \(NCSA\)](#). Guan's lab uses computational models, remote sensing data, field work, machine learning, and supercomputing to address how climate and human practices affect food security, water resource availability, and ecosystem functioning.

This recruitment targets at the following specific directions:

- (1) Modeling hydrological and biogeochemical cycles in advanced earth system models;**
- (2) Data assimilation of satellite data into earth system models;**
- (3) Hyperspectral remote sensing (algorithm development based on radiation transfer and machine learning) and its applications;**
- (4) Advanced algorithm development using Artificial Intelligence for satellite applications.**

The admitted students should have flexibility to work on the above topics upon the guidance and supervision of Dr. Guan. **Strong quantitative and programing skills are required for successful candidates.** The project will involve intense data processing/analysis, large-scale model simulation, and possibly field work. Proficiency in spoken/written English is mandatory.

All applicants should meet the minimum requirements of GPA and GRE by the graduate admission (<http://www.grad.illinois.edu/admissions/apply/requirements>). Information for applying to NRES can be found here: <https://nres.illinois.edu/graduate/apply>. International students should also meet the minimum requirements of TOEFL ([the same link above](#)). The enrollment time is **flexible**.

Prospective graduate students are encouraged to contact Dr. Guan (kaiyug@illinois.edu) first to discuss potential research projects and opportunity before [applying](#). When contacting by email, please include the following items: unofficial transcripts, curriculum vitae, GRE score, names and contact information of three references, and a brief personal statement that highlights skills relevant to the above directions. **We greatly appreciate all the interested applications, but advise that only candidates shortlisted for interview will be notified of the application results.**

The University of Illinois at Urbana-Champaign is a world leader in research, teaching and public engagement, distinguished by the breadth of its programs, broad academic excellence, and internationally renowned faculty and alumni. Illinois serves the world by creating knowledge, preparing students for lives of impact, and finding solutions to critical societal needs. The University of Illinois is an Affirmative Action/Equal Opportunity Employer. The administration, faculty, and staff embrace diversity and are committed to attracting qualified candidates who also embrace and value diversity and inclusivity. Visit www.inclusiveillinois.illinois.edu. **International students have flexibility to study remotely considering the COVID-19 situation.**