UNIVERSITY OF MINNESOTA

Department of Bioproducts and Biosystems Engineering

College of Food, Agricultural and Natural Resource Sciences
College of Science and Engineering

BBE North
Kaufert Lab
2004 Folwell Avenue
St. Paul, MN 55108-6130
612-624-1293
Fax: 612-625-6286

BBE South
BioAgEng Building
1390 Eckles Avenue
St. Paul, MN 55108-6005
612-625-7733
Fax: 612-624-3005

We're recruiting multiple Postdoctoral Researchers and PhD students at **University of Minnesota-Twin Cities**! Funded through both federal and industrial projects, the successful candidates will work on one of the following two topics: (1) Geospatial Artificial Intelligence, with a focus on developing new algorithms for crop classification and yield prediction based on multi-source satellite imagery. This direction is open to both Postdoc and PhD students. (2) Physics Guided Machine Learning (PGML). This novel framework combines process-based models with start-of-the-art machine learning techniques to leverage their complementary strengths. This direction will focus on modeling carbon and nutrient cycles throughout the agroecosystems, and is only open to Postdocs. The successful candidate will be supervised by **Dr. Zhenong Jin** (link) through the Department of Bioproducts and Biosystems Engineering and collaborates closely with **Dr. Vipin Kumar** (link) in the Department of Computer Science and Engineering.

Essential Qualifications:
All applicants are expected to have a strong quantitative background, and graduate from quantitative majors such as earth and atmospheric science, hydrology, ecology, environmental science, math, and statistics, or any other closely related fields. In addition,
Postdoc and PhD applicants for GeoAI should have demonstrated research skills and achievements in this topic, and the followings will be considered as a plus during the review process:
- Having first-author publications in peer-reviewed high-impact journals.
- Having research experience in microwave remote sensing.
- Having good knowledge of deep learning.
- Being experienced with Google Earth Engine and remote sensing analysis.

Postdoc applicants for PGML should have a wide range of skills related to process-based modeling and machine learning:
- Strong programming experience (e.g., Python, Fortran, or C++ in the Linux environment) and be familiar with supercomputing and/or cloud platforms;
- Rich experience and deep understanding of process-based models; applicants whose past research only involves running models at site-level will not be considered;
- Knowledge of machine learning **beyond** simple tools such as Random Forest and ANN.

Additional Qualifications:
- The candidate should have no more than three years of post-degree research experience.
- Strong oral communication and scientific writing skills.

Starting Date: The Postdoc position is expected to start on or before Mar 1st, 2021; the PhD student is expected to start no later than Fall 2021. The position is open till filled.

Application Process: Qualified candidates must send a short introduction email, including CV, TOFEL/GRE score (PhD applicants only) and contact information of three references to Dr. Zhenong Jin **(jinzn@umn.edu)**. 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 questions, please contact Dr. Zhenong Jin.