

Tenure-Track Assistant Professor
Data Science for Agricultural and Ecosystem Sustainability
Department of Bioproducts and Biosystems Engineering
College of Food, Agricultural and Natural Resource Sciences
University of Minnesota

There is an important need to develop data-driven solutions for addressing complex problems facing agriculture and the environment for a sustainable future. With its central motivation to improve agricultural efficiency and contribute to this need, Minnesota's AGREETT (Agricultural Research Education, Extension and Technology Transfer) initiative is making significant investments in agricultural research, education, and Extension to work in key areas of agricultural production, taking advantage of the technological changes that are transforming agriculture and complementing the University's MnDRIVE (MN Driven Innovation Economy) initiative investments.

The Department of Bioproducts and Biosystems Engineering, College of Food, Agricultural and Natural Resource Sciences (CFANS) at the University of Minnesota seeks candidates for a 9-month tenure-track assistant professor position in the broader area of agro-eco-bioinformatics and sustainability with research and teaching (50%/50%) responsibilities.

The goal of the agro-eco-bioinformatics and sustainability position is to improve efficiency in agricultural and ecological systems by developing new ways to collect, interpret, and analyze agricultural and environmental data at various scales, to integrate bioinformatics, computational modeling and machine learning, and help create sustainable solutions to improve decision making. Areas of research may include quantifying the interactions between agricultural and ecological systems and the biotic, abiotic and/or physical factors affecting agricultural efficiency and environmental sustainability. The faculty member will be expected to advance the design and implementation of highly efficient sustainable agricultural systems and sustainable environmental management solutions. The scope may cover a broad spectrum of disciplines in agro-eco-bioinformatics, from data collection, analysis, and integration with computational modeling, systems thinking, analysis and management, database development to dissemination technologies/platforms.

The University of Minnesota's robust research, teaching, and Extension programs have a long history of developing and delivering cutting edge research and education to farmers and other stakeholders. The person in this faculty position will address a critical need in the broad area of agro-eco-bioinformatics. Responsibilities include working with both the public and private sectors to develop new technologies and guidelines for improving agricultural systems efficiency and environmental sustainability. This faculty member will help Minnesota maintain its strong leadership position in bioinformatics and sustainable agriculture.

The person in this position is expected to develop a nationally and internationally recognized research program, seek and secure extramural research funding from state and national

competitive grant programs, and develop an independent research program of basic and applied research. The person is expected to build collaborations across disciplines, and closely interact with other departments within CFANS and CSE and across the University including the Precision Agriculture Center, AI-CLIMATE, and the University of Minnesota Data Science Institute (DSI). The University of Minnesota offers opportunities to work with engineers, agricultural scientists, and other faculty on campus and a network of Research and Outreach Centers across the state.

Teaching responsibilities for this position are envisioned to include undergraduate and graduate level courses offered by the department and related to the successful candidate's discipline and background, including computer applications, and potential electives on topics of big data analytics, circular economy, machine learning in agriculture, agro-bioinformatics, eco-bioinformatics, and Sustainable Systems Management (SSM) program courses. The Sustainable Systems Management program aims to advance society's goals of sustainability in our global economy and the environment

(<https://bbe.umn.edu/undergraduate/sustainable-systems-management-major>). SSM curriculum includes courses such as Systems Thinking, Environmental Life Cycle Analysis, Environmental Management Systems and Strategy etc. Other faculty responsibilities include advising graduate students and service commitments to the department, college, University, and the profession.

Qualifications

Required: PhD in data science, bioinformatics, machine learning, artificial intelligence, computer science, or a related agricultural, environmental, or sustainability field. Basic and relevant applied research experience in biological and ecological systems that are important in Minnesota. Demonstrated record of publication within discipline.

Preferred: Preference will be given to candidates with: a strong peer reviewed publication record and experience in bioinformatics, data science with modeling or machine learning applications; evidence of abilities to work collaboratively on multidisciplinary projects; evidence of potential to develop and manage independent interdisciplinary research programs at the forefront of the discipline; evidence of effective teaching with diverse audiences and excellent written and oral communication skills; demonstrated experience in obtaining external funding; interest in, experience with, and commitment to diversity and inclusiveness.

About the Department of Bioproducts and Biosystems Engineering

The Department of Bioproducts and Biosystems Engineering (bbe.umn.edu) is an internationally renowned academic unit with the core mission of sustainable use of renewable resources and enhancement of the environment. BBE is affiliated with both the College of Food, Agricultural and Natural Resource Sciences (CFANS) and the College of Science and Engineering (CSE).

How to Apply

Applications must be submitted online at humanresources.umn.edu/content/find-job. Search for **Job ID 365183**. To be considered for this position, please click the Apply button and follow

the instructions. You will have the opportunity to complete an online application for the position and attach a cover letter and resume. Additional documents may be attached after the application by accessing your "My Job Applications" page and uploading documents in the "My Cover Letters and Attachments" section.

Applications should include a cover letter, detailed curriculum vitae, statements on teaching and research interests, and a list of three references with contact information (including email addresses). Candidates should include all required application materials **combined into one single PDF document**. Review of applications will begin Dec. 16, 2024 and continue until the position is filled.

During the interview process, applicants will be asked to describe their commitment, experience, and approach to teaching and working with students, colleagues, and constituents from diverse populations.

This position will remain open until filled. To request an accommodation during the application process, please e-mail employ@umn.edu or call (612) 624-UOHR (8647).

Diversity

The University recognizes and values the importance of diversity and inclusion in enriching the employment experience of its employees and in supporting the academic mission. The University is committed to attracting and retaining employees with varying identities and backgrounds.

The University of Minnesota provides equal access to and opportunity in its programs, facilities, and employment without regard to race, color, creed, religion, national origin, gender, age, marital status, disability, public assistance status, veteran status, sexual orientation, gender identity, or gender expression. To learn more about diversity at the U: <http://diversity.umn.edu>.

Background Check Information

Any offer of employment is contingent upon the successful completion of a background check. Our presumption is that prospective employees are eligible to work here. Criminal convictions do not automatically disqualify finalists from employment.

About the University of Minnesota

The University of Minnesota, Twin Cities (UMTC), is among the largest public research universities in the country, offering undergraduate, graduate, and professional students a multitude of opportunities for study and research. Located at the heart of one of the nation's most vibrant, diverse metropolitan communities, students on the campuses in Minneapolis and St. Paul benefit from extensive partnerships with world-renowned health centers, international corporations, government agencies, and arts, nonprofit, and public service organizations.