JUNXIAO ZHANG

Department of Biological Systems Engineering, University of Nebraska-Lincoln
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Education

University of Nebraska–Lincoln ***Expected*** *Dec 2026*
PhD. Biological/Biological Systems Engineering Lincoln, Nebraska
Advisor: Dr. Yufeng Ge

University of Nebraska–Lincoln *May 2023*
M.S. Agricultural & Biological Systems Engineering Lincoln, Nebraska
Advisor: Dr. Yufeng Ge

The Ohio State University *May 2021*
B.S. Agricultural Engineering Columbus, Ohio

Research Experience

Graduate Research Assistant *June 2021 - Present*
University of Nebraska-Lincoln, Department of Biological System Engineering

- Conducted research in high-throughput plant phenotyping, focusing on innovative imaging techniques and AI-based data analysis
- Developed data pipelines for large-scale phenotypic analysis with AI applications

Publication

Peer-Reviewed Articles

1. Bai, G., **Zhang, J.**, Chamara, N., Scoby, D., Murad, O., Stoerger, V., Awada, T., and Ge, Y. Six years of innovation: A comprehensive review of cable-suspended field phenotyping system and its role in precision agriculture. *Journal of the ASABE*. **Under Revision**

2. **Zhang, J.**, Thapa, K., Bai, G. B., and Ge, Y. (2025). Improved estimation of stomatal conductance by combining high-throughput plant phenotyping data and weather variables through machine learning. *Agricultural Water Management*, 309:109321. https://doi.org/10.1016/j.agwat.2025.109321

Conference Papers

1. **Zhang, J.**, Thapa, K., Chamara, N., Bai, G., and Ge, Y. (2023). Estimating crop stomatal conductance from rgb, nir, and thermal infrared images. In Thomasson, J. A. and Bauer, C., editors, *Autonomous Air and Ground Sensing Systems for Agricultural Optimization and Phenotyping VIII*, volume 12539, page 125390A. SPIE. https://doi.org/10.1117/12.2663888

Teaching Experience

Co-Instructor
University of Nebraska-Lincoln
BSEN 460 Instrumentation & Controls *Autumn 2024 & Autumn 2025*

- Delivered lectures and lab sessions, held office hours, and prepared experimental setups.
- Used project-based learning to help students learn through real-world challenges.

Teaching Assistant
University of Nebraska-Lincoln
BSEN 260 Instrumentation I *Spring 2024*
BSEN 460 Instrumentation & Controls *Autumn 2022*

- Delivered lab sessions, graded assignments, and prepared experimental setups

The Ohio State University

FABE 3130 Heat & Mass Transfer *Spring 2021*

FABE 3150 System Dynamic & Electricity *Spring 2021*

- Graded assignments, supported lab sessions, and prepared experimental setups

Conference Presentation

1. **Zhang, J.**, Bai, G., Murad, M. O. F., & Ge, Y. Solar Zenith Angle Correction Improves Soybean Yield Prediction from Low-Altitude NDVI Measurements. CANVAS 2025, Salt Lake City, UT. (Oral)
2. **Zhang, J.**, Chamara, N., Bai, G., & Ge, Y. Estimate Stomatal Conductance of Maize and Soybean Plants in Greenhouse via Imaging and Pot Weighting. ICPA 2024, Manhattan, KS; also presented at ASABE 2024, Anaheim, CA. (Poster)
3. **Zhang, J.**, Chamara, N., Bai, G., & Ge, Y. Diurnal Variation of NDVI for Soybean and Maize under Different Water Treatments. NAPPN 2024, West Lafayette, IN. (Oral)
4. **Zhang, J.**, Chamara, N., Thapa, K., Bai, G., & Ge, Y. Estimating Crop Stomatal Conductance from RGB, NIR, and Thermal Infrared Images. SPIE 2023, Orlando, FL. (Oral)
5. Thapa, K., **Zhang, J.**, Bai, G., & Ge, Y. Characterization of Maize Responses to Differential Nitrogen Rates using Image-Based Phenotyping. NAPPN 2023, St. Louis, MO. (Oral)
6. **Zhang, J.**, Chamara, N., Thapa, K., Bai, G., & Ge, Y. Estimating Maize and Soybean Stomatal Conductance Based on Time Series Canopy Temperature, NDVI and Weather Conditions. NAPPN 2023, St. Louis, MO. (Oral)
7. **Zhang, J.**, Thapa, K., Bai, G., & Ge, Y. Estimating Winter Wheat Stomatal Conductance Using Thermal and Spectral Imaging, Weather Variables, and Machine Learning. ASABE 2022, Houston, TX. (Oral)

Awards & Honors

Graduate Student Teaching Fellow *2025-2026*
College of Engineering, University of Nebraska-Lincoln

Dean's Fellowship *2026*
University of Nebraska-Lincoln

First Prize, Student Oral Presentation Competition *2025*
Airborne and Satellite Remote Sensing Community, American Society of Agronomy

Professional Development Fellowship *2025*
College of Engineering, University of Nebraska-Lincoln

Milton Mohr Fellowship *2024*
College of Engineering, University of Nebraska-Lincoln

David H. and Annie E. Larrick Graduate Student Travel Award *2022*
University of Nebraska-Lincoln

Dean's List *2021*
The Ohio State University

Professional Developments

CIRTL Associate Certification *2026*
Center for the Integration of Research, Teaching and Learning

Professional Activities

Secretary *2023 - 2024*
The Association of Overseas Chinese Agricultural, Biological, and Food Engineers

Website Editor *2022 - 2024*
The Association of Overseas Chinese Agricultural, Biological, and Food Engineers

Academic Service

Peer Reviewer
The Plant Phenome Journal

Undergraduate Proposal Reviewer *2023 - 2024*
University of Nebraska-Lincoln

Professional Society Memberships

ASA, CSSA, and SSSA *Since 2025*
The International Society of Precision Agriculture *Since 2024*
North American Plant Phenotyping Network *Since 2022*
American Society of Agricultural and Biological Engineers *Since 2021*

Skills

Programming languages & Software

- Python, MATLAB, R, C/C++, Linux, LabVIEW, LaTeX
- SOLIDWORKS, AutoCAD

Languages

- English (Proficient), Chinese (Native)