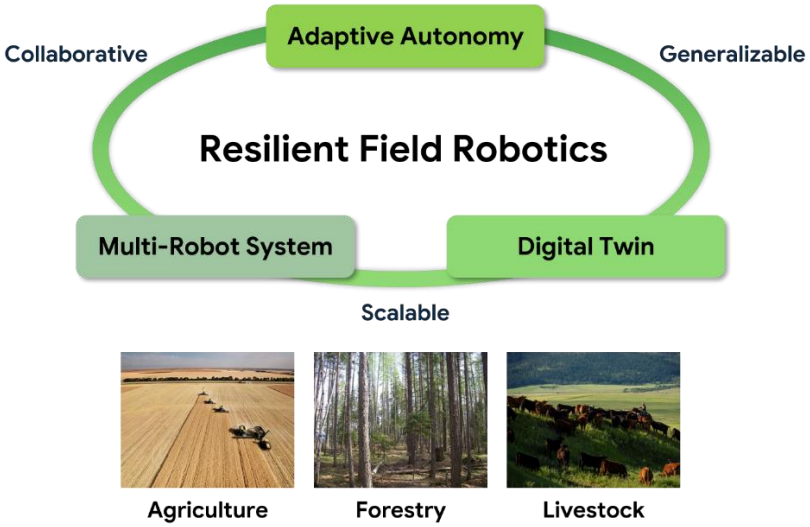
NC STATE UNIVERSITY

Ph.D. Student Openings: Field Robotics for Agricultural Systems

The Field Automation, Robotics, & Machinery Lab (FARM Lab) in the Department of Biological and Agricultural Engineering at North Carolina State University, directed by incoming Assistant Professor Dr. Kitae Kim, invites applications for 2 Ph.D. student positions for **agricultural robotics**, beginning in Spring 2027 (or Fall 2027). The successful applicant will join the FARM Lab, focusing on our mission of developing generalizable, scalable, and robust autonomous field robotic systems to solve global agricultural challenges, such as labor shortages and resource constraints.



In this call, we are looking for highly motivated students to lead research in **two core areas**:

(1) Robust Field Autonomy: Design and deploy robust autonomy stacks (e.g., localization, mapping, sensor fusion, autonomous navigation, and path planning) for mobile robots traversing rugged, unstructured, and messy agricultural environments.

(2) Intelligent Agricultural Monitoring & Real-time Perception: Develop real-time agricultural perception frameworks utilizing advanced robotic sensors, computer vision, and multimodal AI to enable efficient, automated crop management and data analysis.

Why Join the FARM Lab?

As a member joining a newly launched research laboratory, you will work directly and closely with the Principal Investigator. You will play a foundational role in building cutting-edge robotic platforms and their autonomous systems running in real agricultural environments. This will lead to establishing a strong, early publication record and presentation opportunities at major conferences in robotics and agricultural engineering, e.g., ICRA, IROS, RSS, and ASABE AIM.

Required Qualifications:

- Hold or be currently completing an M.S. degree in Robotics, Mechanical Engineering, Electrical Engineering, Computer Science, Biological and Agricultural Engineering, or a closely related field.
- Strong interest and in-depth knowledge in agricultural/field robotics, precision agriculture, agricultural automation, or closely related fields
- Strong programming skills in Python/C++ and experience with ROS/ROS2
- Highly self-motivated, independent, and ambitious in research
- Hands-on experience with robotics/sensor hardware

Preferred Qualifications:

- Experience utilizing simulation environments, such as NVIDIA Isaac Sim, Gazebo, and Unreal Engine
- Familiarity with deep learning frameworks (e.g., PyTorch), Vision Transformers, or Vision-Language Models (VLM), and Vision-Language-Action Models (VLA).

How to Apply:

For initial screening, please email kimkt0408@gmail.com (*with the subject line: [FARM LAB: Ph.D. Application] Your Name*) with (1) your up-to-date CV, (2) a copy of your unofficial academic transcript, and (3) a summary of your research interests. Review will begin immediately, and selected candidates will be invited for virtual interviews.