UF/IFAS AI AND DATA SCIENCE SEMINAR SERIES

WEDNESDAY, FEBRUARY 19, 2025
12:00P.M. - 01:00P.M.

ZOOM:
https://go.ufl.edu/5g8w7ep

Harnessing Generative AI for Surveying Farmers' Perceptions of Data Rights in Agriculture

Generative AI (GenAI) is increasingly used in computational social studies as a substitute for traditional human survey participants, addressing challenges like declining response rates, questionnaire complexity, and participant unpredictability while reducing bias and operational costs. This study presents a novel framework to survey farmers' perceptions of data rights in agriculture using GenAI models as "silicon subjects." Key methodological aspects include statistical representation, tailored prompting

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strategies, and logic reasoning. The methodology incorporates a previous farmer survey on data ownership as a ground truth, ensuring demographic alignment between human respondents and GenAI-generated profiles. GenAI "silicon subjects" are crafted with diverse demographic traits to mirror the original sample distribution. Representative survey questions are designed to test GenAI's capabilities in statistical representation and logical consistency. Tailored prompting strategies, involving role setting, context framing, and scenario descriptions, are critical for ensuring accurate and reliable responses. A multi-dimensional assessment approach evaluates the effectiveness of various prompting techniques, identifying their impact on response accuracy and consistency. Logical reasoning is examined by analyzing key demographic influences, such as how farmers with different education levels perceive data technology adoption. Quantitative results are used for statistical alignment and to assess GenAI's capability in replicating human-like decision-making patterns.

BIO

Ziwen Yu, Assistant Professor at the University of Florida, specializes in Big Data applications for agricultural systems. His work focuses on empowering small farmers, clarifying data ownership, and promoting equitable data governance. Dr. Yu applies AI and IoT technologies to optimize irrigation and enhance climate-resilient farming, leading a USDA-funded project on root zone soil moisture. He also pioneers blockchain for secure data sharing, develops QA/QC procedures for agricultural data networks, and utilizes Generative AI to integrate farmers' perspectives into corporate and government decision-making, advancing sustainable and accessible agricultural innovations.