



F3 R&D Program Performance Progress Report

GSR Awardee:	Yuanlin Yang
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Project Title:	Reliable and Energy-Efficient LoRa Networks for Smart Irrigation and Ground Water Recharging in Orchards (Renewal)
Period covered by the report:	August 16, 2024, to March 31, 2025

Success Stories (accomplishments):

This report highlights our ongoing contributions to smart agriculture through the development of an innovative multi-modal fusion soil composition analysis technology, which combines LoRa and VNIR with machine learning. We are submitting a research paper to the ACM Annual International Conference on Mobile Computing and Networking (MobiCom), presenting how we apply AI to agricultural soil analysis to drive significant advancements in smart agriculture.

Activity Summary: This section encompasses all publications, posters, class and departmental seminar presentations, conference contributions, and outreach efforts to schools.

Activity	Description
FIRA USA 2024	We presented a poster for our localization system
SenSys 2025 in the USA	We will present our Demo

Next Steps: Outline your research plans and upcoming presentations.

Activity	Benefits/Outcome/Impacts	Date to be Completed

Challenges or Needs: Identify industry, educational, and community partner needs, as well as any commercialization requirements.