IDP

Remote Sensing & Autonomous Field Monitoring

KIREAP is an innovative "Impact Tech Start-Up" and part of the TUM Ventures network, addressing significant challenges in the global agricultural supply chain.

KIREAP digitizes the agricultural value chain – from the farm to buyer. We develop autonomous assistance systems for field resource optimization and harvest forecasting. Our proprietary Systems-of-Systems (SoS) architecture enables *autonomous ecosystem intelligence*, by integrating farm data alongside the entire supply chain, leveraging AI-based optimization models for cost efficiency and sustainability, while providing full traceability on our blockchain platform.

Our remote sensing precision agriculture platform integrates drone-based and satellite-based systems, analyzing soil conditions and variables such as weather information combined with multispectral imagery to produce meaningful insights using AI models.

Three projects are designed for students who are interested in getting hands-on experience in applying artificial intelligence to meet agricultural challenges. Collaborate directly with a cross-cultural German-Indian team, learn to test and validate the research methodologies, including context differences between geographic areas.

Projects

1. Develop an AI system that analyzes drone-collected images to understand crop status.
2. Improve cost-efficiency in receiving detailed crop information using regular vs. multispectral cameras.
3. Improve the accuracy of predicting crop yield using a combination of multiple data sources.

Your skills and interests

- ∉ You are studying Computer Science or Agro-/Life Sciences with a focus on sustainability and Data Analytics
- ∉ Python and ideally also C++ programming skills.
- ∉ Knowledge in any one of Computer Vision, AWS, ROS, MAVLink is a plus

Contact @ KIREAP. philipp.rathjen@kireap.com