

Abstract:

This paper presents a mini weather station device as a data collector for a machine learning model, aiming to support the Kenyan agricultural sector through small-scale farmers. Most farmers in Kenya practice small-scale farming and often face challenges in accessing timely and accurate weather information, which deters them from making informed decisions on what kind of crops to grow and the type of resources to allocate to their farms. We propose designing and deploying an affordable IoT mini weather station that collects real-time weather data to address this issue. The device has sensors that collect meteorological parameters such as humidity, temperature, light intensity, and atmospheric pressure. The collected data is transmitted to a cloud server and can be used as input for AI-powered machine learning models for forecasting and advisory systems to personalize recommendations to farmers, such as optimal planting time, irrigation schedules, and pest management strategies based on the prevailing weather.

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