Machine Learning in the Field for More Successful and Eco-Friendly Farming

Challenge & Solutions

Sustainable agriculture requires efficient and accurate reporting of crop yields, data that can be used to assess factors that impact productivity and point to improved harvests in future years. Given enough time, grain experts relying on manual data collection are typically able to point out ways to increase yields through moisture optimization, less waste and lower energy consumption. However, normal harvests permit too little time to manually gather sufficient data, and available expertise is limited, so yields fall short of optimal targets. The AgriSense project put the Internet of Things to work automating data collection and providing the tools to allow scarce expert knowledge to be shared across multiple simultaneous harvests. Project partner NquiringMinds developed a suite of agritech sensors for gathering key harvest-data metrics, and deployed state-of-the-art machine learning to drive improvements in efficiency, energy use and environmental impact. The data tracks crops' complete life cycle: sowing, growing, harvesting, drying, storage and delivery.

EuroCPS Support

Digital Catapult's experts supported the AgriSense project and advised NquiringMinds on design, development, deployment and testing of the complete agricultural-monitoring system to unlock and accelerate AgriSense to market.

Digital Skills

NquiringMinds: Interactive cloud-based visualizations, analytics and control systems; middleware, sensors and IoT routers, AI.
Digital Catapult: IoT and next-generation connectivity labs and demonstrators.
STMicroelectronics: ST 32 EuroCPS platform

Company

Applying its expertise in smart cities, the Internet of Things and data analytics, the company focuses on digital transformation to unlock efficiency and cost savings in existing and new processes. (UK) nquiringminds.com

12 employees

Since 2010

Partners:
Digital Catapult

Impact / What's next

AgriSense was pivotal for NquiringMinds securing subsequent project funding, a £1.5m investment from Innovate UK. The company is collaborating with Brunel University on AgriSense pilots in India that will provide innovative rice drying and storage for rural and industrial farmers. The company's technology-readiness level rose from 2 (technology concept has been formulated) to 4 (experimental proof of concept).