

SmartFarmer - IoT Enabled Smart Farming Application

Literature Survey

Project: Social Media for Smart Farmer-Shared Farming Equipment Model

Author: Wuttipong Pongsuwan

Description:

This research offers a roadmap for creating a concept for building a collaborative and connected mobility model to share the agricultural machine. The study aims to adopt those models to create a collaborative and connected mobility model as a Shared Agricultural MachineNetwork for SmartFarmer.

The fact that Thai farmers are facing the aging crisis, like all other industries and farming machinery has become a need for manpower replacement to keep their earning for livings. Unfortunately, these machines are often expensive, so they can own only a few and when it comes to reaping the harvest season, and they often require different tools for specific purposes.

Our survey has shown that farmers have different ways of cultivating different crops at the same time this implies that in harvesting season there are unused agricultural pieces of equipment available to share among them.

The model of shared farm equipment could lead to new farmers' way of life and it's time to become smart-farmers.

This paper will discuss important considerations, including the need for challenges, trends, and opportunities for farmers to have machinery when needed and to share what idle with others via a peer-to-peer network using mobile application platform.

Published:2019

Project: Young Smart Farmer Programme

Author: Para Jansuwan

Description:

the Thai government initiated the Young Smart Farmer (YSF) programme to counter the decline in the number of young people involved in farming.

The YSF programme has three desired outcomes: first, to increase participants' financial independence; second, to enhance the adoption of innovative farming methods; and third, to retain participants in the long-run by satisfying them. This study aimed to evaluate if these outcomes have been achieved.

A Propensity Score Matching (PSM) method was applied to analyse the data collected from programme participants (61 responses) and non-participants (115 responses) through a survey in the Prachin Buri province in Thailand.

Participation was determined by education, farmland size, farming experience, and challenges to farming.

Most participants (~79%) stated that they were satisfied with the programme; however, the programme did not increase financial independence and the adoption of innovative farming methods.

As such, the programme might not be very effective in motivating young people to continue, return to, or enter farming.

We recommend that the programme can be improved by adjusting training and field trips to meet the needs of participants in different production systems.

The programme should also be expanded beyond providing knowledge and information, and it could offer additional monetary and non-monetary support to participants, such as loans for technology investments needed for farm expansion and competitive advantages.

Published:2021

Project: Smart Farmer Application in Monitoring and Learning of Android-based Rice Cultivation

Author: Rian Farta Wijaya

Description:

Farmers are jobs that are done by planting crops and then harvesting crops for sale or consumption. Farmers must know the plants to be planted to get good harvests. Smart Farmer application is made to be a medium of help for young Farmers who do not have sufficient knowledge in conducting farming activities. The Smart Farmer application is created by presenting relevant information such as cultivation techniques, diseases, pests, and benefits related to rice plants. Rice plants were chosen as the subject matter because rice is the primary food choice needed by humans in Indonesia, and at this time farmers have also decreased in number.

Published:2018

Project: Semantic Web Enabled Smart Farming

Author: Raj Gaire

Description:

Sensors have been used in agriculture to quantitatively monitor and control farming activities.

Middleware like GSN have been developed to manage sensor stream data, while Semantic Sensor Network (SSN) ontology and Linked Data have been developed to describe sensor networks and enable sharing of data over the web respectively.

Creating a semantic web enabled sensor network in a farm that can integrate not only data but also things in the farm, the farmers and other users is a challenge. In this paper, we present our Kirby Smart Farm as a prototypical livestock smartfarm system with an architecture for rapid development.

We have used RabbitMQ and Virtuoso together with our GSN extended for RDF data generation, geo-spatial analysis and complex event processing to achieve a connected smart farm.

Published:2013