Digital Platform of Crops for Smart Agriculture

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Abstract : In agriculture, estimating crop yields is key to improving productivity and decision-making processes such as financial market forecasting and addressing food security issues. The main objective of this paper is to have tools to predict and improve the accuracy of crop yield forecasts using machine learning (ML) algorithms such as CART, KNN and SVM. We developed a mobile app and a web app that uses these algorithms for practical use by farmers. The tests show that our system (collection and deployment architecture, web application and mobile application) is operational and validates empirical knowledge on agro-climatic parameters in addition to proactive decision-making support. The experimental results obtained on the agricultural data, the performance of the ML algorithms are compared using cross-validation in order to identify the most effective ones following the agricultural data. The proposed applications demonstrate that the proposed approach is effective in predicting crop yields and provides timely and accurate responses to farmers for decision support.

Keywords : prediction, machine learning, artificial intelligence, digital agriculture

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1