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Chapter
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Crop Yield Prediction Using Machine Learning Techniques

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Abstract

Agriculture is one of the major revenue producing sectors of India and a source of survival. But there are many issues due to which Indian farmers are reluctant towards agriculture, one of the major challenging issues is Crop yield prediction. An Indian farmer is always interested to know whether and how much yield he/she is about to produce at the end of the season. In the past times, Predictions of crop yield was performed by considering farmer's experience on specific field and crop. The crop production is effected by variegated seasonal, biological and economical constituents but unforeseeable changes in these constituents lead to a huge loss to farmers. These risks can be minimized when significant mathematical or statistical methodologies are applied on data related to soil, weather as well as past yield. With the help of Machine Learning algorithms, crop yield can be predicted in a more effective and corrective way. Which helps the farmers to take percussive measures during farming to get maximum profit. This research focuses on different Machine Learning models (Linear regression, decision tree, Random Forest), those employed to predict the crop yield for a particular region "Telangana, India" based on data collected from 23 different districts. The proposed work efficiently predicts the crop yield production.

Keywords: Yield, Linear regression, Decision tree, Random forest

1. Introduction

Agriculture occupies a major role within the development of India. Not only for its economy however conjointly for the amount of individuals who are directly or indirectly related to it. India's agriculture consists of the various types of crops, with the foremost food staples being wheat and rice. Indian farmers collectively grow pulses, potatoes, sugarcane, oil seeds, and such non-food things such as cotton, tea,