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Patent Search

Invention Title	SYSTEM, APPARATUS, AND METHOD FOR ASSESSMENT OF SUITABILITY OF LAND FOR HORTICULTURAL PLANTS
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Abstract:

Disclosed information processing apparatus (106) includes processing circuitry (120). The processing circuitry (120) extracts a plurality of features from a set of input data associated with a land and a crop and generates a crop feature matrix and a land feature matrix based on the set of input data. The processing circuitry (120) further horizontally concatenates the crop feature matrix with the land feature matrix to generate a concatenated feature matrix, preprocesses the concatenated feature matrix to generate normalized data. Furthermore, the processing circuitry (120) determines the suitability of the land to grow the crop based on the normalized data by way of one or more Artificial Intelligence (AI) techniques. The suitability of the land is one of, a highly suitable land, a suitable land, a marginally suitable land, and a not suitable land and display the determined suitability of the land by way of the user device (102). FIG. 1 is the reference figure.

Complete Specification

Description: TECHNICAL FIELD

The present disclosure relates to horticulture. More particularly, the present disclosure relates to a system, apparatus, and method for assessment of suitability of land for horticultural plants.

BACKGROUND

The crux of sustainable and optimized agriculture lies in the effective classification of suitability of land. As the world grapples with the challenge of feeding an ever-growing population, understanding which plots of land are best suited for specific crops becomes paramount. This not only maximizes yield but also aids in conserving resources and ensuring ecological balance. In this context, horticulture offers a vast array of plants and crops, ranging from fruits like apples and mangoes to ornamental flowers such as roses and tulips, and essential vegetables like tomatoes and lettuce. Understanding the suitability of land for specific crops is important for achieving optimal agricultural production.

Traditionally, for analyzing the suitability of land generally the lands are classified into different categories by analyzing physical and chemical properties of soil, local climatic conditions, and topography. Presently, for horticultural plants in India, the suitability of land is assessed based on the valuable information of soil type, topography, availability of water, and climatic conditions. The existing assessment methods to determine the suitability of land are typically dependent on the combination of field-based surveys, laboratory analysis of soil samples, and expert knowledge, which is time-consuming, labor-intensive, and can be prone to errors due to the subjectivity of human interpretation.

Although the traditional methods provide a foundational understanding and might give a generic suitability index, they might not always consider the intricate relationship

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