Preface

This study examines the fascinating area of crop leaf disease detection and introduces a groundbreaking strategy that uses geo-intelligence and high-resolution imaging tools.

Crop diseases present substantial obstacles to global food security and agricultural productivity. For prompt intervention and to reduce their influence on agricultural yields, it is essential to be able to properly and quickly detect and diagnose these illnesses. Recent developments in data analytics and remote sensing technology have opened up new possibilities for enhancing illness identification procedures.

The development of a geo-intelligent model that combines remote sensing, image processing, and machine learning algorithms to recognize and categorize crop leaf diseases is presented in detail in this work. The model uses aerial pictures and high-resolution data provided by drones.

We shall explore the theoretical underpinnings, technical approaches, and practical applications of the suggested geo-intelligent model throughout the pages of this paper. We'll go into subjects including methods for acquiring and processing images, feature extraction and choice, deep learning algorithms, and model assessment. Real-world case studies and examples are used to demonstrate the applicability and potential of the created model in various agricultural contexts.