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Agriculture Disease Classification by Multi-input Cross Layers Model

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Abstract: *This study addresses the growing challenge of timely and accurate identification of plant diseases in the agricultural sector, where a new classification framework is proposed to integrate the multiput cross layer model (MCLM) and SIFT-ALGORITHM (scale invariant transformation). Plant diseases can cause significant losses in terms of yield and quality, and traditional identification methods that rely heavily on visual inspections are time consuming, error-producing, and often inaccessible to smallholder farmers. The proposed system provides a scalable and efficient alternative to traditional methods, as it uses advanced image processing and machine learning techniques to automate this task. These properties are processed by layers of interconnected neuronal networks to allow for robust learning of models that distinguish diseases with visually similar symptoms, and improve the model's capabilities. Sift-Algorithm further enhances this process by extracting characteristic and invariant from images of leaves that resist environmental changes such as lighting variation, scaling, and rotation. The framework was suitable for integration with mobile or IoT-based platforms, allowing farmers to upload leaf photos and upload instant diagnostic results. This implementation promotes recognition of early diseases, minimizes pesticide abuse, and supports precise breeding efforts. Overall, the project presents a comprehensive and intelligent solution for the classification of agricultural diseases that improve decision- making, optimize plant management and support sustainable agricultural practices around the world.*

Keywords: Horticulture illness classification, Filter calculation, picture preparing, accuracy cultivating, machine learning, profound learning, highlight extraction, real-time determination

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