Industrial Engineering Journal
ISSN: 0970-2555
Volume : 53, Issue 5, No.6, May : 2024

MACHINE LEARNING BASED DIAGNOSIS OF LUMPY SKIN DISEASE

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Abstract
Bullous skin disease (LSD) is an n extremely contagious n extremely contagious condition. that affects cattle and poses a serious threat to livestock worldwide. Controlling the spread of LSD and preventing financial damage requires an early and precise diagnosis. Clinical observations and laboratory testing are two delayed and ineffective forms of traditional diagnosis. Machine learning (ML) has become a potent diagnostic tool in recent years, enabling the prompt and accurate identification of illnesses. This research introduces a novel machine learning-based method for the identification of cellular skin disorders. For comparison, we gathered all available clinical and histological data from animals infected with LSD as well as data from healthy animals. To make them ready for analysis, data sets underwent preprocessing to eliminate noise.
Key words: MLP, additional stock, Naïve baye's, review, technology ml

Introduction

Lumpy disease (LSD) is caused by the Neethling virus and affects animals, with symptoms include fever and skin nodules. It was initially assumed to be an allergic response to bug bites but was subsequently revealed to be a viral illness. LSD has spread to several nations and may cause to reduced milk production, skin disorders, infertility, and even death in afflicted animals. The illness is spread by arthropods near water sources and may be identified using the RT-PCR test. Advancements in technology, such as geospatial data and machine learning, have been utilized to anticipate and study infectious illnesses. Machine learning algorithms, such Random Forest Tree and XG Boost, have proved effective in forecasting outbreaks of illnesses like malaria and dengue. In a recent work, a diagnosis model for COVID-19 was constructed utilizing deep learning ideas. This project seeks to construct a machine learning system based on geographical and meteorological data to determine the presence of LSDV sickness in various nations. Data sets were gathered from Mendeley and four machine learning models will be utilized for illness categorization, with comparisons done using several assessment measures. The study will concentrate on understanding the reliance of the LSD virus on climatic and geographical factors, with the ultimate objective of enhancing illness detection and prediction.

Literature

[1] "Machine learning for spatial analyses in urban areas: a scoping review," by Y. Casali, N.A. Yonca, T. Comes, and Y. Casali, was published in Sustainable Cities and Society, vol. 85, pp. 104050, 2022.

Certainly! The challenges facing sustainable urban development, such as environmental preservation, economic growth, and social equity, are widely recognized. With the advent of digitalization and the availability of vast datasets, machine learning (ML) and artificial intelligence (AI) offer promising avenues for reshaping how we analyze and plan urban areas, thereby enhancing the sustainable city agenda. ML techniques, particularly in urban spatial planning, have garnered increasing attention across various fields, leading to a surge in ML-related research. This study aims to fill a gap by providing an overview of the key domains where ML intersects with urban spatial analysis and identifying the specific methodologies applicable to each. We conduct a scoping assessment of ML

research that utilizes geospatial data to examine metropolitan regions. Our analysis focuses on identifying prevalent themes, data sources, ML algorithms, and approaches to parameter selection. Additionally, we highlight common trends and challenges in the application of ML in this context. Through this study, we aim to pinpoint gaps in knowledge regarding ML approaches for spatial data science and identify data requirements to guide future research endeavors.

[2]Automatic Identification of Paddy Crop Diseases using Deep Learning Approach, R. Gupta, A. Sharma, S. Gupta, M. Garg, and G. Kaur, Proc. 3rd International Conference on Electronics and Sustainable Communication Systems (ICESC), Coimbatore, India, 2022, pp. 915-920

Disease diagnosis is one of the most difficult tasks in the agricultural sciences because of the complexity and regional variations of the crops, crop products, and worm insects that cause illness. To identify uncommon plant diseases, even botanists and agricultural professionals consult a variety of sources for assistance. Because of this, a marginal farmer would not be able to identify the disease and might therefore use the incorrect or excessive amount of pesticides. He needs to consult an expert to identify the problem precisely and get guidance on how to handle it so that his crop doesn't go to waste.The proposed study provides a deep learning-based Convolutional Neural Network (CNN) technique for the identification of several diseases, including Rice Stripe Viral Disease (RSVD), Sheath Blight, Blast, Rice Tungro, and Brown Spot in paddy crops, in order to establish a technical solution. A Geo-referenced Pest Infestation Map (PIM) for the agricultural area in the three districts of Patiala, Sangrur, and Fathegarh Sahib in the Indian state of Punjab should also be created using the system. For every district, a PIM covering ten hectares of land will be built. It will support controlled Chemical

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