

INDUSTRY 4.0

EMERGING TECHNOLOGIES IN DIGITAL ERA

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Artificial Intelligence and Machine Learning: A Potential Tool for Advanced Research and Management in Entomology

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Abstract

Artificial Intelligence (AI) and Machine Learning (ML) are today's tools of choice in entomology which we use to do better and more effective insect pest study and control. We see these techniques in action in identification of insects, in the tracking of pest populations, and in the prediction of pest outbreaks. AI and ML systems we see in the field are analyzing data from the results of field surveys, images, sensors, and weather reports to support this work. With the help of these tools researchers and farmers do better at pest control and crop protection. AI based apps which identify what insect species are present from images, and also machine learning models which put forth predictions of pest population growth and disease spread. Also this approach does away with the overuse of chemical pesticides and at the same time supports eco friendly pest management practices.

Keywords: Artificial intelligence, machine learning, insect identification, pest monitoring, Sustainable pest control, data analysis, smart agriculture