

# Ensemble Learning Model for Damage Detection Using Deep Convolutional Networks

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**Abstract:** Damages to crops happen due to natural calamities, irregular fertilization, improper treatment, etc. To perform this estimation of this damage with high accuracy, both satellite & near-field images are needed. Satellite images assist in evaluation of damages due to natural calamities, while near-field images assist in evaluation of damage due to plant diseases. Separate models are designed for processing these images, which limits their correlative analysis; and thereby reduces overall accuracy of damage detection. To remove this drawback, this text proposes a deep convolutional network (DCN) design that integrates both near-field and far-field images in order to perform effective correlation. The model is trained for detection of areas which are infected by natural calamities, thereby assisting farm experts to undertake corrective measures based on specific area. Results of proposed model are compared with some of the recently developed state-of-the-art methods, and it is observed that the former model achieves 10% better accuracy, performance.

**Keywords:** Crop, damage, prediction, machine learning, convolution, correlation

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