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## (57) Abstract :

Due to the ongoing rise in global population, enough agricultural production is required. Estimating agricultural yields and tracking crop growth are crucial for a country's economic success. The management and security of food are directly impacted by crop production predictions, which also have a significant influence on regional, national, and global economy. Despite the availability of several statistical and simulation models, the suggested technique with a new activation function delivers promising results faster and with more accuracy. In the neural network, sigmoid and hyperbolic tangent activation functions are frequently employed. In the neural network learning method, the activation functions are crucial. The major goal of the proposed study is to create an updated MLP neural network for crop yield estimate utilizing various meteorological parameter datasets, with a new activation function, updated random weights, and revised bias settings. Existing activation functions and freshly developed activation functions with various situations, including weights and bias values, have been used to evaluate the MLP model. In this study, we compare the outcomes of several activation functions and suggest three new, straightforward activation functions, to enhance the functionality of neural networks and produce more precise results.

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