

NeuraFarming – Deep Neural Network Algorithm for Predictive Agriculture

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Abstract:

A major driving force behind irregularities and crises in production and supply of agricultural output, especially in Bangladesh, is dependence on traditional methods of planning and plotting seasonal harvests, which is gradually turning obsolete due to global warming and climate change. Integration of Artificial Intelligence circuits with conventional farming practices is a prospective avenue for incorporation of real time data into a more accurate automated forecasting system. With the core concept of “open source biology”, *NeuraFarming* revolves around training a deep neural network algorithm aimed to enforce a platform for smart agriculture. Feeding real time open source agricultural data to the network, the model exhaustively runs cogent multivariate simulations to predict the price, demand and probability of a successful harvest for a given crop, timeframe and location. The network can be then transcribed to serve different purposes on specific user interfaces – recommending appropriate crops to farmers for maximum profitability; while authorities and investors can predict harvests and project market demands via two-way interactions with field level producer information. With more users connecting to *NeuraFarming* and more real time data being incorporated into the neural network, the accuracy of the model will continuously increase; further utilization of the circuit with additional cooperation with IT based agricultural services may lead to peak functionality – serving as an optimal hub for real time information storage, predictive simulation, adjustment and influencing of regional and global food production data attending to needs of stakeholders ranging from on-field farmers to agricultural policy makers.

Pictorial Abstract:

