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(57) Abstract :
Agriculture and livestock are important contributors to social and economic stability. Many individuals are concerned about food safety and transparency in the food supply chain. Because of their success in a variety of applications, the Internet of Things (IoT) and blockchain are gaining traction. They create a vast amount of data that advanced deep learning (ADL) algorithms may optimize and utilize effectively. The value of such advances in supply chain management may be seen in a variety of ways, including increased visibility, provenance, digitization, disintermediation, and smart contracts. As a study object, this uses the secure IoT–blockchain data of Industry 4.0 in the food business. We present a hybrid model based on recurrent neural networks using ADL approaches (RNN). As a result, we employed a prediction model based on long short-term memory (LSTM) and gated recurrent units (GRU) as well as genetic algorithm (GA) optimization to improve the parameters of the hybrid model. We use GA to find the best training parameters, and then we use GRU to cascade LSTM. We tested the suggested system's performance with various numbers of users. This method intends to assist supply chain practitioners in making use of cutting-edge technology, as well as the industry in formulating policies based on ADL projections.

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