Claims

1. A method for determining risk in a food supply chain, the method comprising:

receiving a preliminary set of data from a plurality of data source, wherein the preliminary set comprises trigger event data and non-trigger event data;

identifying the trigger event data from the preliminary set of data by machine learning for natural language processing;

obtaining weather forecast data from the preliminary set of data, wherein the weather forecast data comprise values of air temperature, humidity, wind speed, air pressure, air density, surface temperature or a combination of any of the weather forecast data;

validating the trigger event data;

identifying, from the preliminary set of data, occurrence of natural disaster at a geospatial location indicated by a geospatial data; and

monitoring, based on the identified natural disaster, growth of crops and plants at one or more physical farms at the geospatial location indicated by the geospatial data;

wherein the method is characterized by

comparing the identified trigger event data with the geospatial data, wherein the geospatial data is obtained for the identified trigger event data in real-time;

comparing the identified trigger event data with the weather forecast data;

calculating a risk value based on the comparison, wherein the risk value is calculated for the identified trigger event data in the food supply chain, wherein the risk value includes a positive score and a negative score;

determining risk in the food supply chain by calculating impact percentile of the calculated risk value, wherein the risk is determined when the calculated impact value is greater than a threshold value;

classifying the determined risk in the food supply chain into at least one of supply side risk and demand side risk; and

alerting at least one entity of the food supply chain based on the determined risk and the classification of the determined risk via Internet of Things (IoT) based sensors.

2. The method as claimed in claim 1, the determining risk in the food supply chain further comprises:

classifying, by a classifier, the identified trigger event data into one of high risk, intermediate risk and low risk based on the calculated risk value; and

adding the calculated risk value for each of the classified trigger event data in the food supply chain to determine risk in the food supply chain.

3. The method as claimed in claim 1, wherein the trigger event data comprises one or more keywords related to pandemic, natural disaster, geo-political tension, and corporate bankruptcy.

4. The method as claimed in claim 1, further comprises performing one or more actions based on the determined risk in the food supply chain, wherein the one or more actions include:

notifying a user when the calculated risk value is greater than the threshold value;

determining a response plan based on the calculated risk value, wherein the response plan includes one or more of changing suppliers, and increasing or decreasing orders from the suppliers; and

activating the response plan for each of the identified trigger event data by implementing machine learning algorithms.

5. The method as claimed in claim 1, wherein the threshold value is preset or dynamically set by a user.

6. The method as claimed in claim 1, wherein the preliminary set of data is obtained by integrating one or more of social media data, government data, news data, weather data, and company data.

7. A system for determining risk in a food supply chain, the system comprising:

a processor;

a memory;

a risk determination module communicatively coupled to the processor, wherein the risk determination module is executed by the processor to:

receive a preliminary set of data from a plurality of data source, wherein the preliminary set comprises trigger event data and non-trigger event data;

identify the trigger event data from the preliminary set of data by machine learning for natural language processing;

obtain weather forecast data from the preliminary set of data, wherein the weather forecast data comprising values of air temperature, humidity, wind speed, air pressure, air density, and surface temperature;

a natural language processing module communicatively coupled to the risk determination module to validate the trigger event data;

a natural disaster prediction module communicatively coupled to the risk determination module to identify, from the preliminary set of data, occurrence of natural disaster at a geospatial location indicated by a geospatial data; and

a plant growth monitoring module communicatively coupled to the risk determination module to monitor, based on the identified natural disaster, growth of crops and plants at one or more physical farms at the geospatial location indicated by the geospatial data;

wherein the system is characterized by the risk determination module to:

compare the identified trigger event data with the geospatial data, wherein the geospatial data is obtained for the identified trigger event data in real-time;

compare the identified trigger event data with the weather forecast data;

calculate a risk value based on the comparison, wherein the risk value is calculated for the identified trigger event data in the food supply chain, wherein the risk value includes a positive score and a negative score;

determine risk in the food supply chain by calculating impact percentile of the calculated risk value, wherein the risk is determined when the calculated impact value is greater than a threshold value;

classify the determined risk in the food supply chain into at least one of supply side risk and demand side risk; and

alert at least one entity of the food supply chain based on the determined risk and the classification of the determined risk via Internet of Things (IoT) based sensors.

8. The system as claimed in claim 7, wherein to determine risk in the food supply chain the risk determination module is further executed by the processor to:

classify, by a classifier, the identified trigger event data into one of high risk, intermediate risk and low risk based on the calculated risk value; and

add the calculated risk value for each of the classified trigger event data in the food supply chain to determine risk in the food supply chain.

9. The system as claimed in claim 7, wherein the trigger event data comprises one or more keywords related to pandemic, natural disaster, geo-political tension, and corporate bankruptcy.

10. The system as claimed in claim 7, wherein the risk determination module is further executed by the processor to perform one or more actions based on the determined risk in the food supply chain, wherein the one or more actions include:

notify a user when the calculated risk value is greater than the threshold value;

determine a response plan based on the calculated risk value, wherein the response plan includes one or more of changing suppliers, and increasing or decreasing orders from the suppliers; and

activate the response plan for each of the identified trigger event data by implementing machine learning algorithms.

11. The system as claimed in claim 7, wherein the threshold value is preset or dynamically set by a user.

12. The system as claimed in claim 7, wherein the preliminary set of data is obtained by integrating one or more of social media data, government data, news data, weather data, and company data.