CLAIMS

1. A server for facilitating a verification of life-cycle assessment (LCA) data, the server comprising:

a memory configured to store instructions; and

a processor configured to execute the stored instructions and configured to:

detect LCA data from an LCA data source;

identify information relating to a quality of the LCA data and a quality of the LCA data source using a natural language processing (NLP) technique;

evaluate credibility of the LCA data source using a first machine learning model based on the identified information relating to the quality of the LCA data source;

evaluate a plausibility of an impact level using a second machine learning model based on the identified information relating to the quality of the LCA data; and

verify the LCA data as either valid data or invalid data, based on the evaluated credibility of the LCA data source and the evaluated plausibility of the impact level,

wherein the processor is configured to evaluate the credibility of the LCA data source using a sentiment analysis-based text classification and a machine learning model evaluation.

2. The server according to claim 1, wherein the processor is further configured to:

obtain project data for a project from a project database; and

store the project data in a data storage as temporary data,

wherein the data storage stores at least one of a trusted data source, an invalid data source, invalid data, and a valid data format.

3. The server according to claim 2, wherein the processor is further configured to identify the LCA data that needs to be verified among the project data stored as the temporary data, based on at least one of the invalid data source, the invalid data, and the valid data format stored in the data storage and an internal LCA database.

4. The server according to claim 3, wherein the processor is further configured to identify the LCA data source whose credibility needs to be evaluated among the identified LCA data, based on the trusted data source saved in the data storage.

5. The server according to any one of claims 1 to 4, wherein the first machine learning model is a classification machine learning model, and the second machine learning model is a regression machine learning model.

6. The server according to any one of claims 1 to 5, wherein the processor is configured to evaluate the credibility of the LCA data source by:

collecting data including the information relating to the quality of the LCA data and the quality of the LCA data source from the LCA data source using a data collection module;

extracting the information relating to the quality of the LCA data and the quality of the LCA data source from the collected data using a data extraction module;

verifying the extracted information based on information obtained from a trusted LCA data source using a data verification module;

evaluating the credibility of the LCA data source using a text classification module;

predicting the credibility of the LCA data source using a credibility prediction module;

evaluating themes of the LCA data source using a theme evaluation module;

evaluating the quality of the LCA data using an LCA data analysis module; and

generating a final evaluation result using a result generation module.

7. The server according to any one of claims 1 to 6, wherein the processor is further configured to search the LCA data in the LCA data source which is evaluated credible.

8. The server according to claim 7, wherein the processor is further configured to:

for another LCA data that is not found in the LCA data source, analyse likelihood that the another LCA data is true based on the impact level; and

generate an action item for a verifier based on the likelihood that the another LCA data is true.

9. The server according to claim 7 or claim 8, wherein the processor is further configured to, for the LCA data that is found in the LCA data source, extract data relating to the quality of the LCA data, evaluate data completeness of the LCA data, evaluate the quality of the LCA data against pre-defined LCA data quality criteria, process the LCA data, and evaluate the plausibility of the impact level.

10. The server according to any one of claims 2 to 9, wherein the processor is further configured to:

check if all the LCA data has been verified;

for the project that all the LCA data has been verified, send a verification result to the project database; and

for the project that at least a part of the LCA data has not been verified, send the verification result to the project database, and return the project to an applicant for an action.

11. A method for facilitating a verification of life-cycle assessment (LCA) data, the method comprising:

detecting LCA data from an LCA data source;

identifying information relating to a quality of the LCA data and a quality of the LCA data source using a natural language processing (NLP) technique;

evaluating credibility of the LCA data source using a first machine learning model based on the identified information relating to the quality of the LCA data source;

evaluating a plausibility of an impact level using a second machine learning model based on the identified information relating to the quality of the LCA data; and

verifying the LCA data as either valid data or invalid data, based on the evaluated credibility of the LCA data source and the evaluated plausibility of the impact level,

wherein the credibility of the LCA data source is evaluated using a sentiment analysis-based text classification and a machine learning model evaluation.

12. The method according to claim 11 further comprising:

obtaining project data for a project from a project database; and

storing the project data in a data storage as temporary data,

wherein the data storage stores at least one of a trusted data source, an invalid data source, invalid data, and a valid data format.

13. The method according to claim 12 further comprising: identifying the LCA data that needs to be verified among the project data stored as the temporary data, based on at least one of the invalid data source, the invalid data, and the valid data format stored in the data storage and an internal LCA database.

14. The method according to claim 13 further comprising: identifying the LCA data source whose credibility needs to be evaluated among the identified LCA data, based on the trusted data source saved in the data storage.

15. The method according to any one of claims 11 to 14, wherein the first machine learning model is a classification machine learning model, and the second machine learning model is a regression machine learning model.

16. The method according to any one of claims 11 to 15, wherein the evaluating the credibility of the LCA data source further comprises:

collecting data including the information relating to the quality of the LCA data and the quality of the LCA data source from the LCA data source using a data collection module;

extracting the information relating to the quality of the LCA data and the quality of the LCA data source from the collected data using a data extraction module;

verifying the extracted information based on information obtained from a trusted LCA data source using a data verification module;

evaluating the credibility of the LCA data source using a text classification module;

predicting the credibility of the LCA data source using a credibility prediction module;

evaluating themes of the LCA data source using a theme evaluation module;

evaluating the quality of the LCA data using an LCA data analysis module; and

generating a final evaluation result using a result generation module.

17. The method according to any one of claims 11 to 16 further comprising: searching the LCA data in the LCA data source which is evaluated credible.

18. The method according to claim 17 further comprising:

for another LCA data that is not found in the LCA data source, analysing likelihood that the another LCA data is true based on the impact level; and

generating an action item for a verifier based on the likelihood that the another LCA data is true.

19. The method according to claim 17 or claim 18 further comprising: for the LCA data that is found in the LCA data source, extracting data relating to the quality of the LCA data,

evaluate data completeness of the LCA data, evaluating the quality of the LCA data against pre-defined LCA data quality criteria, processing the LCA data, and evaluating the plausibility of the impact level.

20. The method according to any one of claims 12 to 19 further comprising:

checking if all the LCA data has been verified;

for the project that all the LCA data has been verified, sending a verification result to the project database; and

for the project that at least a part of the LCA data has not been verified, sending the verification result to the project database, and returning the project to an applicant for an action.