WHAT IS CLAIMED IS:

1. A method for analyzing technology comprising:

generating a metaframe structure for keywords to be analyzed, deriving a technology structure based on the metaframe structure using a generative AI model, generating search keywords based on the derived technology structure, and searching and obtaining a plurality of documents based on the search keywords; and

refining the plurality of documents according to a similarity between the documents, performing preprocessing to utilize contents of the plurality of documents, and then performing detailed technology classification based on results obtained by performing content-based clustering.

2. The method for analyzing technology according to claim 1, wherein the generating the metaframe structure comprises:

designing the metaframe structure by including a plurality of metaframe items derived based on a report published from at least one company or at least one organization registered in a technical field corresponding to the keywords to be analyzed.

3. The method for analyzing technology of claim 1, wherein the plurality of metaframe structures comprise at

least one metaframe item of sub-technology, technical element, process element, application industry, social impact, and related technology.

4. The method for analyzing technology according to claim 1, wherein the deriving the technology structure comprises:

generating a plurality of technology items related to the keywords to be analyzed in the technical field corresponding to the keywords to be analyzed using the generative AI model; and

deriving the technology structure by connecting at least some of the plurality of generated technology items with at least some of the plurality of metaframe items corresponding thereto included in the metaframe structure.

5. The method for analyzing technology according to claim 1, further comprising:

generating one or more search formulas for each of the plurality of technology items using at least some of the one or more search keywords generated for each of the plurality of technology items;

wherein the generating search keywords comprises:

generating one or more search keywords corresponding to each of the plurality of technology items included in the technology structure using the generative AI model.

6. The method for analyzing technology according to claim 5, wherein the searching and obtaining the plurality of documents comprises:

searching and obtaining documents including a text related to the keywords to be analyzed from a predetermined database or web based on at least some of the search keywords and search formulas.

7. The method for analyzing technology according to claim 1, wherein

at least one of the refining, the preprocessing, and the content-based clustering is performed based on a deep learning AI model and one or more documents of each of the plurality of technology items included in the technology structure.

8. The method for analyzing technology according to claim 7, further comprising:

classifying one or more detailed technology items for each of the plurality of technology items based on the content-based clustering results and the generative AI model; and

generating technology titles, technology summaries, and major keywords for each of the one or more detailed technology items using one or more clustered documents classified according to the content-based clustering.

9. The method for analyzing technology according to claim 8, further comprising:

generating one or more major keywords for each of the one or more detailed technology items from the clustered documents based on at least some of the generative AI and a text mining algorithm.

10. The method for analyzing technology according to claim 8, wherein at least some of the technology titles and the technology summaries for each of the one or more detailed technology items is generated based on the major keywords and one or more major documents identified for each of the one or more detailed technology items according to the content-based clustering.

11. The method for analyzing technology according to claim 10, further comprising:

determining a cluster center of each of the one or more detailed technology items based on the content-based clustering; and determining the predetermined number of

clustered documents located at the cluster center as major documents of the corresponding detailed technology items.

12. The method for analyzing technology according to claim 6, further comprising:

performing the content-based clustering on each of one or more documents previously obtained for each of the plurality of technology items by dividing categories between technical documents including patents or papers, and web data;

classifying one or more detailed technology items for each of the categories of the technical document and web data based on the content-based clustering results and the generative AI model; and

generating major keywords for each of the one or more detailed technology items using one or more clustered documents classified according to the content-based clustering.

13. The method for analyzing technology according to claim 1, further comprising:

performing trend analysis based on the acquisition and collection results and the classification results performed in the information collection step and the technology classification step; and

discovering promising technology candidate groups using the trend analysis results.

14. The method for analyzing technology of claim 13, wherein the performing the trend analysis further comprises:

performing identification of major research subjects and manpower based on the collection results and the classification results.

15. A device for analyzing technology comprising:

a storage unit in which a generative AI model is stored;

an information collection unit configured to generate a metaframe structure for keywords to be analyzed, derive a technology structure based on the metaframe structure using a generative AI model, generate search keywords based on the derived technology structure, and search and obtain a plurality of documents based on the search keywords; and

a technology classification unit configured to refine the plurality of documents according to a similarity between the documents, perform preprocessing to utilize contents of the plurality of documents, and then perform detailed technology classification based on results obtained by performing content-based clustering.

16. The device for analyzing technology according to claim 15, wherein the information collection unit designs the metaframe structure by including a plurality of metaframe items derived based on a report published from at least one company or at least one organization registered in a technical field corresponding to the keywords to be analyzed.

17. The device for analyzing technology according to claim 15, wherein the information collection unit generates a plurality of technology items related to the keywords to be analyzed in the technical field corresponding to the keywords to be analyzed using the generative AI model, and derives the technology structure by connecting at least some of the plurality of generated technology items with at least some of the plurality of metaframe items corresponding thereto included in the metaframe structure.

18. The device for analyzing technology according to claim 15, wherein the information collection unit generates one or more search keywords corresponding to each of the plurality of technology items included in the technology structure using the generative AI model, and

generates one or more search formulas for each of the plurality of technology items using at least some of the one

or more search keywords generated for each of the plurality of technology items.

19. The device for analyzing technology according to claim 15, wherein the technology classification unit performs the refinement, the preprocessing, and the content-based clustering on one or more documents for each of the plurality of technology items included in the technology structure based on at least one deep learning AI model.

20. The device for analyzing technology according to claim 15, further comprising:

a trend analysis unit configured to perform trend analysis based on the acquisition and collection results and the classification results performed in the information collection unit and the technology classification unit; and

a technology candidate group discovery unit configured to discover promising technology candidate groups using the trend analysis results.

WHAT IS CLAIMED IS:

1. A method for analyzing technology comprising:

generating a metaframe structure for keywords to be analyzed, deriving a technology structure based on the metaframe structure using a generative AI model, generating search keywords based on the derived technology structure, and searching and obtaining a plurality of documents based on the search keywords; and

refining the plurality of documents according to a similarity between the documents, performing preprocessing to utilize contents of the plurality of documents, and then performing detailed technology classification based on results obtained by performing content-based clustering.

2. The method for analyzing technology according to claim 1, wherein generating the metaframe structure comprises:

designing the metaframe structure by including a plurality of metaframe items derived based on a report published from at least one company or at least one organization registered in a technical field corresponding to the keywords to be analyzed.

3. The method for analyzing technology of claim 1, wherein the metaframe structures comprises at least one metaframe item of sub-technology, technical element, process

element, application industry, social impact, and related technology.

4. The method for analyzing technology according to claim 1, wherein deriving the technology structure comprises:

generating a plurality of technology items related to the keywords to be analyzed in the technical field corresponding to the keywords to be analyzed using the generative AI model; and

deriving the technology structure by connecting at least some of the plurality of generated technology items with at least some of the plurality of metaframe items corresponding thereto included in the metaframe structure.

5. The method for analyzing technology according to claim 1, further comprising:

generating one or more search formulas for each of the plurality of technology items using at least some of the one or more search keywords generated for each of the plurality of technology items;

wherein generating search keywords comprises:

generating one or more search keywords corresponding to each of the plurality of technology items included in the technology structure using the generative AI model.

6. The method for analyzing technology according to claim 5, wherein searching and obtaining the plurality of documents comprises:

searching and obtaining documents including a text related to the keywords to be analyzed from a predetermined database or web based on at least some of the search keywords and search formulas.

7. The method for analyzing technology according to claim 1, wherein

at least one of the refining, the preprocessing, and the content-based clustering is performed based on a deep learning AI model and one or more documents of each of the plurality of technology items included in the technology structure.

8. The method for analyzing technology according to claim 7, further comprising:

classifying one or more detailed technology items for each of the plurality of technology items based on the content-based clustering results and the generative AI model; and

generating technology titles, technology summaries, and major keywords for each of the one or more detailed technology items using one or more clustered documents classified according to the content-based clustering.

9. The method for analyzing technology according to claim 8, further comprising:

generating one or more major keywords for each of the one or more detailed technology items from the clustered documents based on at least some of the generative AI and a text mining algorithm.

10. The method for analyzing technology according to claim 8, wherein at least some of the technology titles and the technology summaries for each of the one or more detailed technology items is generated based on the major keywords and one or more major documents identified for each of the one or more detailed technology items according to the content-based clustering.

11. The method for analyzing technology according to claim 10, further comprising:

determining a cluster center of each of the one or more detailed technology items based on the content-based clustering; and determining the predetermined number of clustered documents located at the cluster center as major documents of the corresponding detailed technology items.

12. The method for analyzing technology according to claim 6, further comprising:

performing the content-based clustering on each of one or more documents previously obtained for each of the plurality of technology items by dividing categories between technical documents including patents or papers, and web data;

classifying one or more detailed technology items for each of the categories of the technical document and web data based on the content-based clustering results and the generative AI model; and

generating major keywords for each of the one or more detailed technology items using one or more clustered documents classified according to the content-based clustering.

13. The method for analyzing technology according to claim 1, further comprising:

performing trend analysis based on the acquisition and collection results and the classification results performed in the information collection step and the technology classification step; and

discovering promising technology candidate groups using the trend analysis results.

14. The method for analyzing technology of claim 13, wherein performing the trend analysis further comprises:

performing identification of major research subjects and manpower based on the collection results and the classification results.

15. A device for analyzing technology comprising:

a storage unit in which a generative AI model is stored;

an information collection unit configured to generate a metaframe structure for keywords to be analyzed, derive a technology structure based on the metaframe structure using a generative AI model, generate search keywords based on the derived technology structure, and search and obtain a plurality of documents based on the search keywords; and

a technology classification unit configured to refine the plurality of documents according to a similarity between the documents, perform preprocessing to utilize contents of the plurality of documents, and then perform detailed technology classification based on results obtained by performing content-based clustering.

16. The device for analyzing technology according to claim 15, wherein the information collection unit designs the metaframe structure by including a plurality of metaframe items derived based on a report published from at least one

company or at least one organization registered in a technical field corresponding to the keywords to be analyzed.

17. The device for analyzing technology according to claim 15, wherein the information collection unit generates a plurality of technology items related to the keywords to be analyzed in the technical field corresponding to the keywords to be analyzed using the generative AI model, and derives the technology structure by connecting at least some of the plurality of generated technology items with at least some of the plurality of metaframe items corresponding thereto included in the metaframe structure.

18. The device for analyzing technology according to claim 15, wherein the information collection unit generates one or more search keywords corresponding to each of the plurality of technology items included in the technology structure using the generative AI model, and

generates one or more search formulas for each of the plurality of technology items using at least some of the one or more search keywords generated for each of the plurality of technology items.

19. The device for analyzing technology according to claim 15, wherein the technology classification unit performs

the refinement, the preprocessing, and the content-based clustering on one or more documents for each of the plurality of technology items included in the technology structure based on at least one deep learning AI model.

20. The device for analyzing technology according to claim 15, further comprising:

a trend analysis unit configured to perform trend analysis based on the acquisition and collection results and the classification results performed in the information collection unit and the technology classification unit; and

a technology candidate group discovery unit configured to discover promising technology candidate groups using the trend analysis results.