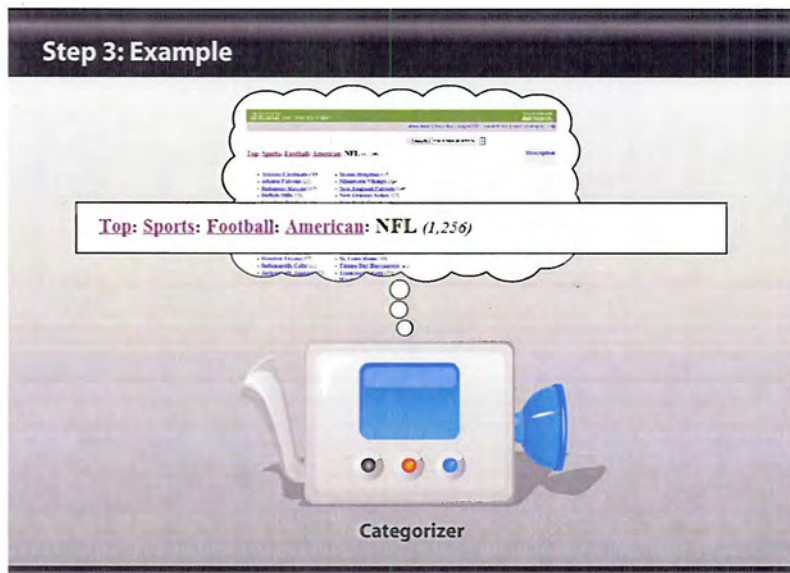
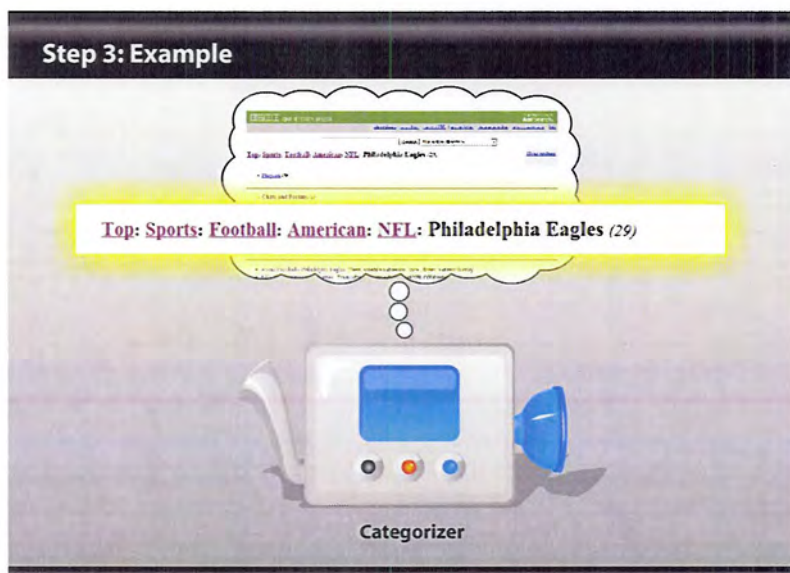


Step 3: Example



"NFL,"



and "Philadelphia Eagles" categories.

Step 3: Example

Step 3: Example

Eagles finalize coaching staff
Associated Press

Top: Sports: Football: American: NFL: Philadelphia Eagles (29)

Johnnie Lynn was hired to be the secondary/cornerbacks coach, and Bobby April, Jr., was named defensive quality control coach.

David Culley was promoted to senior offensive assistant/wide receivers. James Urban becomes assistant offensive coordinator. Doug Pederson is the new quarterbacks coach. And Duce Staley will serve as special teams quality control coach.

Lynn joins the Eagles after a five-year stint in San Francisco, working as the 49ers secondary coach. April, the son of Philadelphia's special teams coordinator Bobby April, spent 2010 as special teams coordinator and safeties coach at Nicholls State.

Culley has been the wide receivers coach since 1999. Urban spent the past two seasons as quarterbacks coach. Pederson worked as the team's offensive quality control coach from 2009-10. And Staley was a coaching intern last season.

Categorizer

Once it has the right category, the categorizer assigns to the document content the classification label for that category.

Step 3: Example

Eagles finalize coaching staff
Associated Press

PHILADELPHIA – Andy Reid and the Philadelphia Eagles completed their staff on Tuesday by adding two coaches and promoting four others.

Johnnie Lynn was hired to be the secondary/cornerbacks coach, and Bobby April, Jr., was named defensive quality control coach.

David Culley was promoted to senior offensive assistant/wide receivers. James Urban becomes assistant offensive coordinator. Doug Pederson is the new quarterbacks coach. And Duce Staley will serve as special teams quality control coach.

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Culley has been the wide receivers coach since 1999. Urban spent the past two seasons as quarterbacks coach. Pederson worked as the team's offensive quality control coach from 2009-10. And Staley was a coaching intern last season.

Categorizer

Classification Label = Top: Sports: Football: American: NFL: Philadelphia Eagles (29)

Step 4: Formulating a Query to Restrict a Search

Step 4: Formulating a Query to Restrict a Search



FIG. 39 illustrates an example of a query 3930 contextualized using classification labels 3920 of document categorization hierarchy 3900. Using document content 3902, the categorizer 3610 identifies classification labels 3920. These labels identify nodes 3910, 3912, and 3914 of the top-level node 3904. Specifically in this example, the entities “seven” and “up” are determined by categorizer 3610 to relate most appropriately to the class of documents found in the directory science>biology>genetics. As specified at 3930, the search is focused on documents found in the single node of the document hierarchy genetics, at 3910.

- The identified entities and document classification label are used to formulate a query in order to search an information retrieval system

Col. 50, Ln. 1-11

The classification label assigned to document content in step 3 is used to restrict a search at the information retrieval system

Step 4: Formulating a Query to Restrict a Search



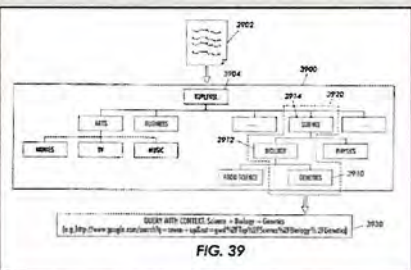
FIG. 39 illustrates an example of a query 3930 contextualized using classification labels 3920 of document categorization hierarchy 3900. Using document content 3902, the categorizer 3610 identifies classification labels 3920. These labels identify nodes 3910, 3912, and 3914 of the top-level node 3904. Specifically in this example, the entities “seven” and “up” are determined by categorizer 3610 to relate most appropriately to the class of documents found in the directory science>biology>genetics. As specified at 3930, the search is focused on documents found in the single node of the document hierarchy genetics, at 3910.

- The identified entities and document classification label are used to formulate a query in order to search an information retrieval system
- The classification label is used to restrict the search of the information retrieval system to only documents that belong to the corresponding category

Col. 50, Ln. 1-11

to documents falling within the corresponding category only.

Step 4: Formulating a Query to Restrict a Search



- The identified entities and document classification label are used to formulate a query in order to search an information retrieval system
- The classification label is used to restrict the search of the information retrieval system to only documents that belong to the corresponding category

QUERY WITH CONTEXT: Science + Biology + Genetics

(e.g. <http://www.google.com/search?q=seven+up&cat=gwd%2FTop%2FScience%2FBiology%2FGenetics>)

This is what is illustrated in figure 39. The identified entities – “seven up” – and the document category – “science – biology – genetics” – are both transmitted to the search engine in the URL string. At the time of the patent, this query would restrict the search to the genetics category of a Web directory.

Step 4: Example

Step 4: Example

Eagles finalize coaching staff

Associated Press

PHILADELPHIA **Andy Reid** and the **Philadelphia Eagles** completed their staff on Tuesday by adding two coaches and promoting four others.

Johnnie Lynn was hired to be the secondary/cornerbacks coach, and **Bobby April Jr.** was named defensive quality control coach.

David Culley was promoted to senior offensive assistant/wide receivers. **James Urban** becomes assistant offensive coordinator. **Doug Pederson** is the new quarterbacks coach. And **Duce Staley** will serve as special teams quality control coach.

Lynn joins the **Eagles** after a five-year stint in **San Francisco**, working as the **49ers** secondary coach. April, the son of Philadelphia's special teams coordinator **Bobby April**, spent 2010 as special teams coordinator and safeties coach at **Nicholls State**.

Culley has been the wide receivers coach since 1999. Urban spent the past two seasons as quarterbacks coach. **Pederson** worked as the team's offensive quality control coach from 2009-10. And **Staley** was a coaching intern last season.

Classification Label = Top: Sports: Football: American: NFL: Philadelphia Eagles (30)

Going back to the example, the claimed system has now located a set of entities within the document content,

Step 4: Example

Eagles finalize coaching staff

Associated Press

PHILADELPHIA **Andy Reid** and the **Philadelphia Eagles** completed their staff on Tuesday by adding two coaches and promoting four others.

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David Culley was promoted to senior offensive assistant/wide receivers. **James Urban** becomes assistant offensive coordinator. **Doug Pederson** is the new quarterbacks coach. And **Duce Staley** will serve as special teams quality control coach.

Lynn joins the **Eagles** after a five-year stint in **San Francisco**, working as the **49ers** secondary coach. April, the son of Philadelphia's special teams coordinator **Bobby April**, spent 2010 as special teams coordinator and safeties coach at **Nicholls State**.

Culley has been the wide receivers coach since 1999. Urban spent the past two seasons as quarterbacks coach. **Pederson** worked as the team's offensive quality control coach from 2009-10. And **Staley** was a coaching intern last season.

Classification Label = Top: Sports: Football: American: NFL: Philadelphia Eagles (30)

and has also assigned a classification label for that document content.

With both sets of information, the claimed system can formulate a query concerning a set of entities so that a search is restricted to documents in the category that corresponds to the classification label.

Step 4: Example

Eagles finalize coaching staff

Associated Press

PHILADELPHIA **Andy Reid** and the **Philadelphia Eagles** completed their staff on Tuesday by adding two coaches and promoting four others.

Johnnie Lynn was hired to be the secondary/cornerbacks coach, and **Bobby April Jr.** was named defensive quality control coach.

David Culley was promoted to senior offensive assistant/wide receivers. **James Urban** becomes assistant offensive coordinator. **Doug Pederson** is the new quarterbacks coach. And **Duce Staley** will serve as special teams quality control coach.

Lynn joins the **Eagles** after a five-year stint in **San Francisco**, working as the **49ers** secondary coach. April, the son of Philadelphia's special teams coordinator **Bobby April**, spent 2010 as special teams coordinator and safeties coach at **Nicholls State**.

Culley has been the wide receivers coach since 1999. Urban spent the past two seasons as quarterbacks coach. **Pederson** worked as the team's offensive quality control coach from 2009-10. And **Staley** was a coaching intern last season.

Classification Label = Top: Sports: Football: American: NFL: Philadelphia Eagles (30)

For example, a user might be interested in additional information about "Eagles."

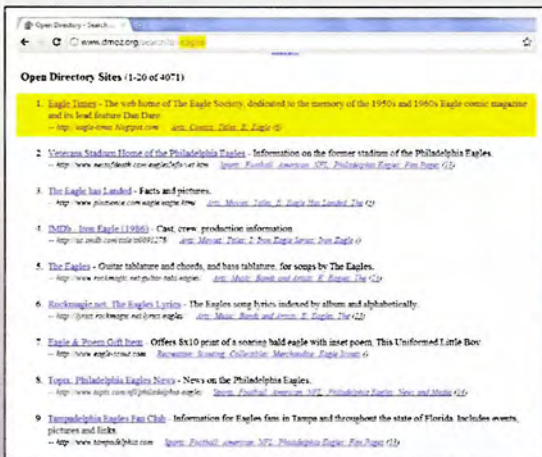
Step 4: Example

Step 4: Example



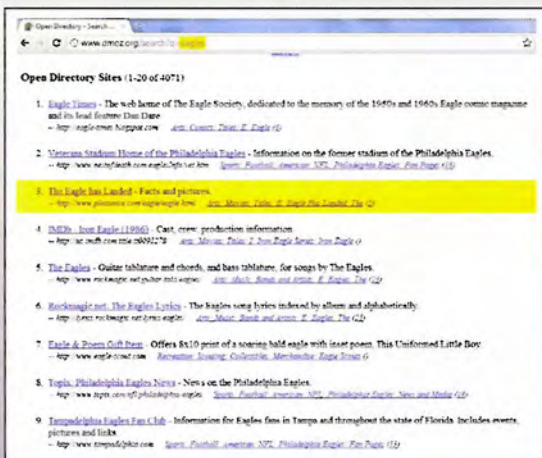
Without the categorization label, the system would search documents relating to “eagles” in general.

Step 4: Example



This results in a lot of irrelevant information being returned to the user, including a fan page about the “Eagle” comic,

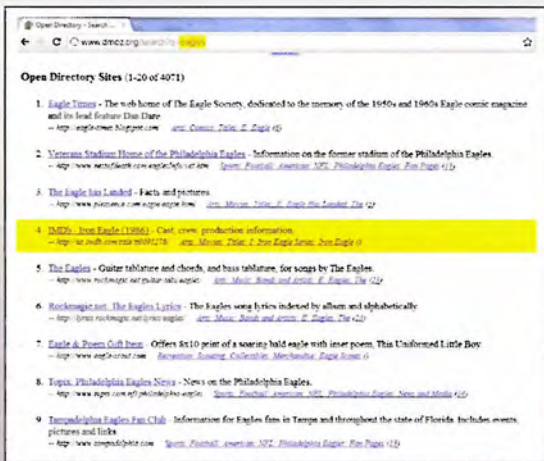
Step 4: Example



a description of the movie “The Eagle Has Landed,”

Step 4: Example

Step 4: Example



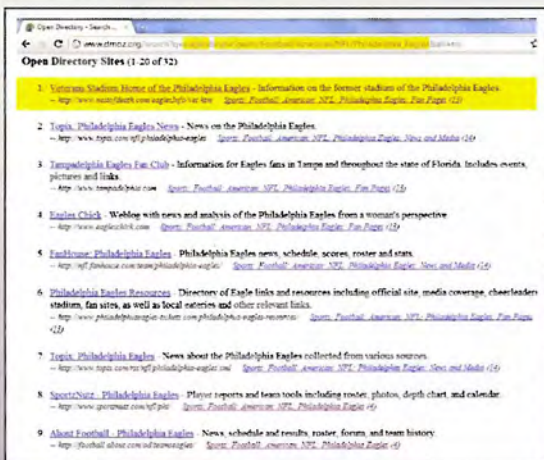
and the IMDb page for the “Iron Eagle” movie.

Step 4: Example



But with the categorization label, the claimed system is able to restrict the search to documents in the category with relevant information.

Step 4: Example



Now the search results are all relevant to “Eagles” as it is used in the selected document content, including Web pages on Veterans Stadium,

Step 4: Example

Eagles news,

Step 4: Example

A screenshot of a search engine results page for the query "Philadelphia Eagles". The page shows a list of 10 search results under the heading "Open Directory Sites (1 of 10)". The second result, "Topix, Philadelphia Eagles News - News on the Philadelphia Eagles", is highlighted in yellow. The search results are as follows:

- Veterans Stadium Home of the Philadelphia Eagles** - Information on the former stadium of the Philadelphia Eagles.
- <http://www.veteransstadium.com/philadelphia-eagles/> *Sports: Football, American NFL, Philadelphia Eagle, Fan Page (1)*
- Topix, Philadelphia Eagles News - News on the Philadelphia Eagles**
- <http://www.topix.com/topix/philadelphia-eagles/> *Sports: Football, American NFL, Philadelphia Eagle, News and Media (1)*
- Tampa Bay Philadelphia Eagles Fan Club** - Information for Eagles fans in Tampa and throughout the state of Florida. Includes events, pictures and links.
- <http://www.tampabayphieagles.com/> *Sports: Football, American NFL, Philadelphia Eagle, Fan Page (1)*
- Eagles Chick** - Working with news and analysis of the Philadelphia Eagles from a woman's perspective.
- <http://www.eagleschick.com/> *Sports: Football, American NFL, Philadelphia Eagle, Fan Page (1)*
- FanHouse Philadelphia Eagles** - Philadelphia Eagles news, schedule, scores, roster and stats.
- <http://www.fanhouse.com/teams/philadelphia-eagles/> *Sports: Football, American NFL, Philadelphia Eagle, News and Media (1)*
- Philadelphia Eagles Resources** - Directory of Eagle links and resources including official site, media coverage, cheerleader stadium, fan sites, as well as local eateries and other relevant links.
- <http://www.philadelphiaeagles.com/philadelphia-eagles-resources/> *Sports: Football, American NFL, Philadelphia Eagle, Fan Page (1)*
- Topix Philadelphia Eagles** - News about the Philadelphia Eagles collected from various sources.
- <http://www.topix.com/topix/philadelphia-eagles/> *Sports: Football, American NFL, Philadelphia Eagle, News and Media (1)*
- Sportsworld Philadelphia Eagles** - Player reports and team tools including roster, photos, depth chart, and calendar.
- <http://www.sportsworld.com/philadelphia-eagles/> *Sports: Football, American NFL, Philadelphia Eagle (1)*
- About Football Philadelphia Eagles** - News, schedule and results, roster, forum, and team history.
- <http://football.about.com/teams/eagles/> *Sports: Football, American NFL, Philadelphia Eagle (1)*

Step 4: Example

and the Eagles Fan Club.

A second screenshot of a search engine results page for the query "Philadelphia Eagles". The page shows a list of 10 search results under the heading "Open Directory Sites (1 of 10)". The third result, "Tampa Bay Philadelphia Eagles Fan Club", is highlighted in yellow. The search results are as follows:

- Veterans Stadium Home of the Philadelphia Eagles** - Information on the former stadium of the Philadelphia Eagles.
- <http://www.veteransstadium.com/philadelphia-eagles/> *Sports: Football, American NFL, Philadelphia Eagle, Fan Page (1)*
- Topix, Philadelphia Eagles News - News on the Philadelphia Eagles**
- <http://www.topix.com/topix/philadelphia-eagles/> *Sports: Football, American NFL, Philadelphia Eagle, News and Media (1)*
- Tampa Bay Philadelphia Eagles Fan Club** - Information for Eagles fans in Tampa and throughout the state of Florida. Includes events, pictures and links.
- <http://www.tampabayphieagles.com/> *Sports: Football, American NFL, Philadelphia Eagle, Fan Page (1)*
- Eagles Chick** - Working with news and analysis of the Philadelphia Eagles from a woman's perspective.
- <http://www.eagleschick.com/> *Sports: Football, American NFL, Philadelphia Eagle, Fan Page (1)*
- FanHouse Philadelphia Eagles** - Philadelphia Eagles news, schedule, scores, roster and stats.
- <http://www.fanhouse.com/teams/philadelphia-eagles/> *Sports: Football, American NFL, Philadelphia Eagle, News and Media (1)*
- Philadelphia Eagles Resources** - Directory of Eagle links and resources including official site, media coverage, cheerleader stadium, fan sites, as well as local eateries and other relevant links.
- <http://www.philadelphiaeagles.com/philadelphia-eagles-resources/> *Sports: Football, American NFL, Philadelphia Eagle, Fan Page (1)*
- Topix Philadelphia Eagles** - News about the Philadelphia Eagles collected from various sources.
- <http://www.topix.com/topix/philadelphia-eagles/> *Sports: Football, American NFL, Philadelphia Eagle, News and Media (1)*
- Sportsworld Philadelphia Eagles** - Player reports and team tools including roster, photos, depth chart, and calendar.
- <http://www.sportsworld.com/philadelphia-eagles/> *Sports: Football, American NFL, Philadelphia Eagle (1)*
- About Football Philadelphia Eagles** - News, schedule and results, roster, forum, and team history.
- <http://football.about.com/teams/eagles/> *Sports: Football, American NFL, Philadelphia Eagle (1)*

Importance of Restricting the Search

Importance of Restricting a Search

Instead, Appellant respectfully submits that Rensison fails to disclose or suggest Appellant's claimed limitations set forth in claim 1 of, *automatically formulating a query to restrict a search of an information retrieval system for information concerning a set of entities to a category of information in the information retrieval system identified by a classification label assigned by categorizing the selected document content.*

Appeal Brief to BPAI, Pg. 5-6

A key feature of the invention is that queries are formulated to restrict a search to the category identified by the assigned classification label. Xerox argued during prosecution that this was an improvement over prior art systems, which Xerox asserted did not restrict a search.

Importance of Restricting a Search

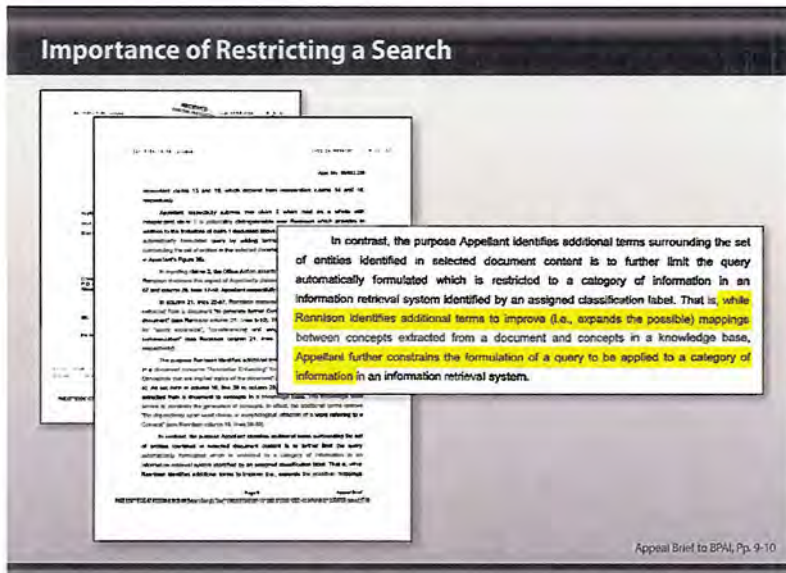
Furthermore, Rensison expands terms of the user's query using a knowledge base (KB) (see Rensison column 26, lines 19-20). Rensison discloses that "all the KB Concepts which are related to or subsumed by the query term are also included in the search, so that it needs not rely on matching an exact word, but can instead match the general concept of interest" (see Rensison column 26, lines 32-35). (See also Rensison column 29, lines 16-32.)

Unlike either action described in Rensison (a) using user queries to define document making up an information space or (b) defining queries by user movement in the information space, Appellant's claimed invention concerns the automatic formulation of a query in which the automatically formulated query is restricted to information concerning a set of entities identified in document content and a category of information in an information retrieval system identified by a classification label assigned by categorizing the document content.

Appeal Brief to BPAI, Pg. 6-7

When appealing the Examiner's Final Rejection to the BPAI, the applicants distinguished their invention from the Rensison prior art reference on the grounds that the query formulated by the invention *restricts* the search rather than *expands* the search.

Importance of Restricting the Search



As the applicants further explained, “while Rennison identifies additional terms to *improve* (i.e., *expand* the possible) mappings between concepts extracted from a document and concepts in a knowledge base, Appellant further *constrains* the formulation of a query to be applied to a category of information in an information retrieval system.” Throughout their appeal brief, the applicants repeatedly distinguish the query expansion provided by Rennison from the restriction imposed on a search by the claimed invention. The patent was subsequently granted.

Document Processing Flowchart

Document Processing Flowchart

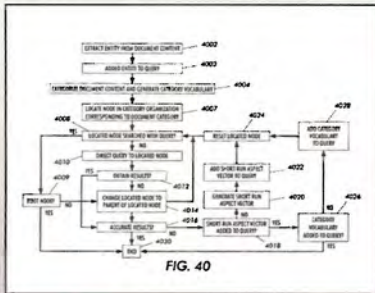
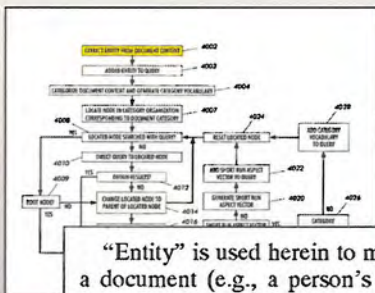


Figure 40 and the corresponding text contain a more detailed flowchart that further describes the claimed document processing system.

Document Processing Flowchart



At 4002, one or more entities are extracted from a document. Entity identification or extraction can be performed: (a) manually by a user, (b) automatically by entity extractor 3804 shown in FIG. 38 using for example a method as described in section B.4, or (c) by the categorizer 3610. At 4003, the extracted entity at 4002 is added to a query at 4003.

“Entity” is used herein to mean something recognized in a document (e.g., a person’s name, a location, a medical term, a graphics entity that may include image data, graphics data, audio data or video data) that can be in the form of an image, text, embedded data, HTML, etc.

First, one or more entities are extracted from a document.

Col. 51, Ln. 26-32; Col. 6, Ln. 65 – Col. 7, Ln. 2

Document Processing Flowchart

Document Processing Flowchart

At 4002, one or more entities are extracted from a document. Entity identification or extraction can be performed: (a) manually by a user, (b) automatically by entity extractor 3804 shown in FIG. 38 using for example a method as described in section B.4, or (c) by the categorizer 3610. At 4002, the extracted entity is added to a query at 4003.

Col. 51, Ln. 26-32

As previously discussed, entities are typically words or phrases, such as "Jordan."

Document Processing Flowchart

At 4002, one or more entities are extracted from a document. Entity identification or extraction can be performed: (a) manually by a user, (b) automatically by entity extractor 3804 shown in FIG. 38 using for example a method as described in section B.4, or (c) by the categorizer 3610. At 4003, the extracted entity is added to a query at 4003.

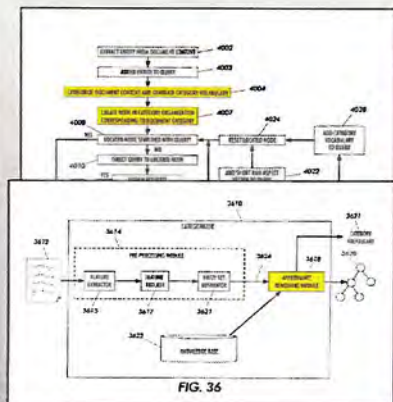
[http://www.dmoz.org/search?q="jordan"](http://www.dmoz.org/search?q=)

Col. 51, Ln. 26-32

That entity is then added to the query.

Document Processing Flowchart

Document Processing Flowchart



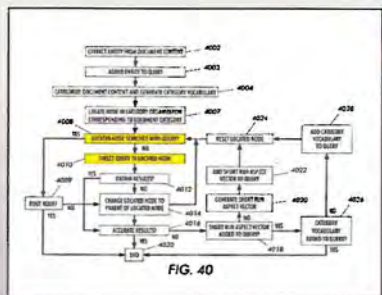
Subsequently, the approximate reasoning module 3618 accesses a knowledge base 3622 that records variables (i.e., document features and associated frequencies) that are used to define a function that models the mapping from the document 3612, or its transformed representation 3624, to a class in an ontology. One specific embodiment of such a knowledge base is represented using a set of rules that describe relationships between the recorded variables. Typically each class is represented by one rule. In mapping the function, the inference engine 3618 matches the document with each class rule stored in knowledge base 3622 and uses a decision maker for drawing conclusions as to which action to rely on.

The function as represented by the knowledge base 3622 and approximate reasoning module 3618 can be defined using a variety of model types including the following: probabilistic models; fuzzy set/logic models; Boolean-valued logic models; nearest neighbor approaches; and neural networks; some of which are described in more detail below. For background relating to some of these algorithms see the following publications by Shanahan, "Soft Computing For Knowledge Discovery: Introducing Cartesian Grammatical Features", Kluwer Academic Publishers, Boston (2000); and Mitchell "Machine Learning", McGraw-Hill, New York (1997).

Col. 42, Ln. 48 - Col. 43, Ln. 5

That set of features and weights is then mapped to a class or category in an ontology using other known techniques, such as those described in "Soft Computing for Knowledge Discovery" and "Machine Learning."

Document Processing Flowchart



At 4008, if the node located node has not been searched with the query, then the query as it is defined is directed to the located node in the category organization at 4010. At 4009, if the root node has not already been searched using the defined query, then the node in the category organization at which the category is defined is changed at 4014 to its parent node. The parent node in a category organization is generally less descriptive than the child node. The root node defines the least descriptive category in the category organization.

Col. 51, Ln. 42-51

Once the category has been assigned, a query concerning the identified set of entities is directed to that category.

Document Processing Flowchart

Document Processing Flowchart

Search: jordan

Restricting Search to Category: Sports: Basketball: Professional: NBA: Players: J: Jordan, Michael

Open Directory Categories (1 of 1)

- 1 Sports: Basketball: Professional: NBA: Players: J: Jordan, Michael (12)

Open Directory Sites (1 of 12)

- 1 23Jordan - A Michael Jordan Tribute - News, statistics, pictures, biography, and a forum.
- <http://www.23jordan.com> [Open Directory Professional: NBA: Players: J: Jordan, Michael](#)
- 2 Michael Jordan's Chat Transcripts - From an interview with CBS sports and Michael Jordan
- http://www.sportsline.com/jordan/chat_transcripts.html [Open Directory Professional: NBA: Players: J: Jordan, Michael](#)
- 3 Michael Jordan's Chat Transcripts - From an interview with CBS sports and Michael Jordan
- http://www.chicagotrib.com/jordan/chat_transcripts.html [Open Directory Professional: NBA: Players: J: Jordan, Michael](#)
- 4 The Michael Jordan Virtual Gallery - Includes photos, videos, sound and shows
- <http://www.1984jordan.com> [Open Directory Professional: NBA: Players: J: Jordan, Michael](#)
- 5 Michael Jordan Man - Provides video, statistics, history, multimedia, and photos.
- <http://jordanman.com/home.html> [Open Directory Professional: NBA: Players: J: Jordan, Michael](#)
- 6 CBS Sportsline Michael Jordan - Gives player rankings, fantasy updates, as well as statistical comparisons.
- <http://www.sportsline.com/nba/players/playerpage.html> [Open Directory Professional: NBA: Players: J: Jordan, Michael](#)

Col.51, Ln. 42-51

Professional:

Document Processing Flowchart

Search: jordan

Restricting Search to Category: Sports: Basketball: Professional: NBA: Players: J: Jordan, Michael

Open Directory Categories (1 of 1)

- 1 Sports: Basketball: Professional: NBA: Players: J: Jordan, Michael (12)

Open Directory Sites (1 of 12)

- 1 23Jordan - A Michael Jordan Tribute - News, statistics, pictures, biography, and a forum.
- <http://www.23jordan.com> [Open Directory Professional: NBA: Players: J: Jordan, Michael](#)
- 2 Michael Jordan's Chat Transcripts - From an interview with CBS sports and Michael Jordan
- http://www.sportsline.com/jordan/chat_transcripts.html [Open Directory Professional: NBA: Players: J: Jordan, Michael](#)
- 3 Michael Jordan's Chat Transcripts - From an interview with CBS sports and Michael Jordan
- http://www.chicagotrib.com/jordan/chat_transcripts.html [Open Directory Professional: NBA: Players: J: Jordan, Michael](#)
- 4 The Michael Jordan Virtual Gallery - Includes photos, videos, sound and shows
- <http://www.1984jordan.com> [Open Directory Professional: NBA: Players: J: Jordan, Michael](#)
- 5 Michael Jordan Man - Provides video, statistics, history, multimedia, and photos.
- <http://jordanman.com/home.html> [Open Directory Professional: NBA: Players: J: Jordan, Michael](#)
- 6 CBS Sportsline Michael Jordan - Gives player rankings, fantasy updates, as well as statistical comparisons.
- <http://www.sportsline.com/nba/players/playerpage.html> [Open Directory Professional: NBA: Players: J: Jordan, Michael](#)

Col.51, Ln. 42-51

NBA:

Document Processing Flowchart

Search: jordan

Restricting Search to Category: Sports: Basketball: Professional: NBA: Players: J: Jordan, Michael

Open Directory Categories (1 of 1)

- 1 Sports: Basketball: Professional: NBA: Players: J: Jordan, Michael (12)

Open Directory Sites (1 of 12)

- 1 23Jordan - A Michael Jordan Tribute - News, statistics, pictures, biography, and a forum.
- <http://www.23jordan.com> [Open Directory Professional: NBA: Players: J: Jordan, Michael](#)
- 2 Michael Jordan's Chat Transcripts - From an interview with CBS sports and Michael Jordan
- http://www.sportsline.com/jordan/chat_transcripts.html [Open Directory Professional: NBA: Players: J: Jordan, Michael](#)
- 3 Michael Jordan's Chat Transcripts - From an interview with CBS sports and Michael Jordan
- http://www.chicagotrib.com/jordan/chat_transcripts.html [Open Directory Professional: NBA: Players: J: Jordan, Michael](#)
- 4 The Michael Jordan Virtual Gallery - Includes photos, videos, sound and shows
- <http://www.1984jordan.com> [Open Directory Professional: NBA: Players: J: Jordan, Michael](#)
- 5 Michael Jordan Man - Provides video, statistics, history, multimedia, and photos.
- <http://jordanman.com/home.html> [Open Directory Professional: NBA: Players: J: Jordan, Michael](#)
- 6 CBS Sportsline Michael Jordan - Gives player rankings, fantasy updates, as well as statistical comparisons.
- <http://www.sportsline.com/nba/players/playerpage.html> [Open Directory Professional: NBA: Players: J: Jordan, Michael](#)

Col.51, Ln. 42-51

Players:

Document Processing Flowchart

Document Processing Flowchart

Search: jordan

Restricting Search to Category: Sports: Basketball: Professional: NBA: Players: J. Jordan, Michael

Open Directory Categories (1 of 1)

1 Sports: Basketball: Professional: NBA: Players: J. Jordan, Michael (12)

Open Directory Sites (1 of 12)

1. 23Jordan - A Michael Jordan Tribute - News, statistics, pictures, biography, and a forum. <http://www.23jordan.com> Sports: Basketball: Professional: NBA: Players: J. Jordan, Michael
2. Michael Jordan's Chat Transcripts - From an interview with CBS sports and Michael Jordan. <http://www.sportscare.com/jordanchat/transcripts.html> Sports: Basketball: Professional: NBA: Players: J. Jordan, Michael
3. Michael Jordan's Chat Transcripts - From an interview with CBS sports and Michael Jordan. <http://www.sportscare.com/jordanchat/transcripts.html> Sports: Basketball: Professional: NBA: Players: J. Jordan, Michael
4. The Michael Jordan Virtual Gallery - Includes photos, videos, sound, and shows. <http://www.virtualjordan.com> Sports: Basketball: Professional: NBA: Players: J. Jordan, Michael
5. Michael Jordan Mix - Provides video, statistics, history, multimedia, and photos. <http://jordanmix.com/home.html> Sports: Basketball: Professional: NBA: Players: J. Jordan, Michael
6. CBS Sportsline Michael Jordan - Gives player rankings, fantasy updates, as well as statistical comparisons. http://www.sportsline.com/cha/player_profile_page_064/ Sports: Basketball: Professional: NBA: Players: J. Jordan, Michael

Col. 51, Ln. 42-51

J:

has not been searched is directed to organization at 4010. At in searched using gory organization led at 4014 to its y organization is de. The root node be category orga-

Document Processing Flowchart

Search: jordan

Restricting Search to Category: Sports: Basketball: Professional: NBA: Players: J. Jordan, Michael

Open Directory Categories (1 of 1)

1 Sports: Basketball: Professional: NBA: Players: J. Jordan, Michael (12)

Open Directory Sites (1 of 12)

1. 23Jordan - A Michael Jordan Tribute - News, statistics, pictures, biography, and a forum. <http://www.23jordan.com> Sports: Basketball: Professional: NBA: Players: J. Jordan, Michael
2. Michael Jordan's Chat Transcripts - From an interview with CBS sports and Michael Jordan. <http://www.sportscare.com/jordanchat/transcripts.html> Sports: Basketball: Professional: NBA: Players: J. Jordan, Michael
3. Michael Jordan's Chat Transcripts - From an interview with CBS sports and Michael Jordan. <http://www.sportscare.com/jordanchat/transcripts.html> Sports: Basketball: Professional: NBA: Players: J. Jordan, Michael
4. The Michael Jordan Virtual Gallery - Includes photos, videos, sound, and shows. <http://www.virtualjordan.com> Sports: Basketball: Professional: NBA: Players: J. Jordan, Michael
5. Michael Jordan Mix - Provides video, statistics, history, multimedia, and photos. <http://jordanmix.com/home.html> Sports: Basketball: Professional: NBA: Players: J. Jordan, Michael
6. CBS Sportsline Michael Jordan - Gives player rankings, fantasy updates, as well as statistical comparisons. http://www.sportsline.com/cha/player_profile_page_064/ Sports: Basketball: Professional: NBA: Players: J. Jordan, Michael

Col. 51, Ln. 42-51

Jordan, Michael" category,

has not been searched is directed to organization at 4010. At in searched using gory organization led at 4014 to its y organization is de. The root node be category orga-

Document Processing Flowchart

City tells Jordan to keep it clean (air)

Updated: October 7, 2006, 4:08 PM PT

SAN FRANCISCO — A city official has asked the PGA Tour to remind Michael Jordan that he can't smoke cigars at Harding Park during the Presidents Cup.

Jordan, inducted into the Basketball Hall of Fame last month, is serving as an honorary assistant to U.S. Captain Phil Mickel. A photo of Jordan smoking his cigar during a practice round, published Tuesday in the San Francisco Chronicle, caught the attention of city officials.

Harding Park is a public facility, and smoking is banned.

"I've already sent an e-mail to the PGA Tour director," Recreation and Park general manager Phil Gumburg told the newspaper. "It was a polite nudge reminding them that smoking is legal and that we would appreciate their support."

Jordan apparently is aware of the regulations, saying in an interview with PGATour.com that he "heard this is a public place, so they limit what you can smoke. I'm not even supposed to be smoking, but this was a practice round and no one said anything.

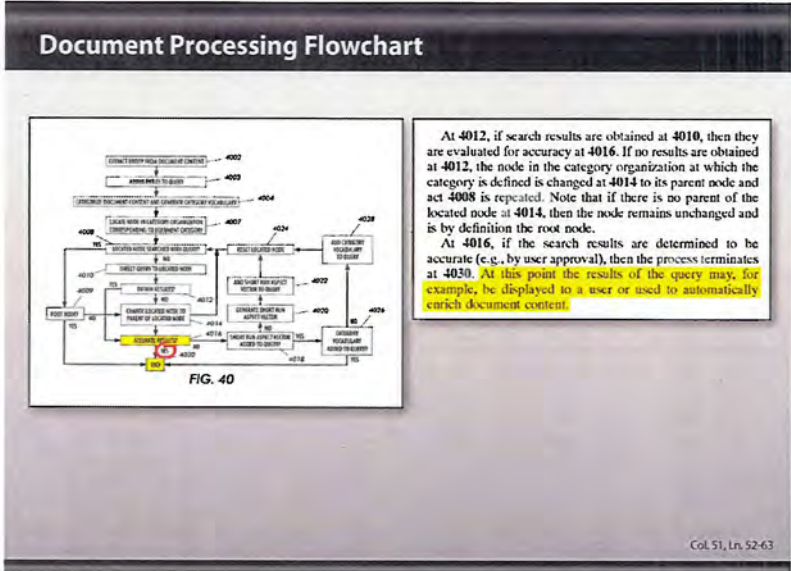
Ideally, Jordan said, he would like to smoke a minimum of three cigars per round, according to PGATour.com.

Col. 51, Ln. 42-51

thereby obtaining results that are more in line with the assigned category.

has not been searched is directed to organization at 4010. At already been searched using the category organization is changed at 4014 to its category organization is held node. The root node ry in the category orga-

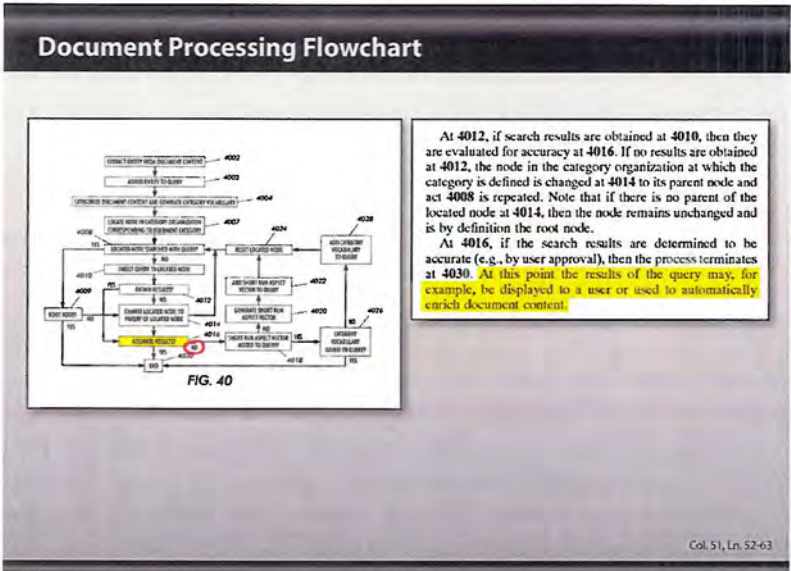
Document Processing Flowchart



If the search results are of sufficiently high quality, then the process ends, and the results may be displayed to the user or used to automatically enrich document content.

At 4012, if search results are obtained at 4010, then they are evaluated for accuracy at 4016. If no results are obtained at 4012, the node in the category organization at which the category is defined is changed at 4014 to its parent node and act 4008 is repeated. Note that if there is no parent of the located node at 4014, then the node remains unchanged and is by definition the root node.

At 4016, if the search results are determined to be accurate (e.g., by user approval), then the process terminates at 4030. At this point the results of the query may, for example, be displayed to a user or used to automatically enrich document content.



The patent describes that it is possible, however, that the search results are not sufficiently accurate.

At 4012, if search results are obtained at 4010, then they are evaluated for accuracy at 4016. If no results are obtained at 4012, the node in the category organization at which the category is defined is changed at 4014 to its parent node and act 4008 is repeated. Note that if there is no parent of the located node at 4014, then the node remains unchanged and is by definition the root node.

At 4016, if the search results are determined to be accurate (e.g., by user approval), then the process terminates at 4030. At this point the results of the query may, for example, be displayed to a user or used to automatically enrich document content.

Document Processing Flowchart

Document Processing Flowchart

FIG. 40

At 4018, if the results are not accurate at 4016, then a determination is made whether a short run aspect vector has already been added to the query. If it has not already been added then a short run aspect vector using the document content and the entity as described above in section E.3.2 is generated at 4020. At 4022 the aspect vector is added to the query and the node to which the query is pointing in the category organization is reset to the node that corresponds to its original categorization at 4024. Subsequently using this augmented query, act 4008 is repeated.

2. The method according to claim 1, further comprising limiting the query by adding terms relating to context information surrounding the set of entities in the selected document content.

Col. 51, Ln. 64 - Col. 52, Ln. 6; Col. 76, Ln. 32-35

In that case, the patent describes additional methods to return high-quality results. One method is to create an "aspect vector," which analyzes the content near the selected entity and adds additional search terms to the query.

Document Processing Flowchart

FIG. 40

At 4018, if the results are not accurate at 4016, then a determination is made whether a short run aspect vector has already been added to the query. If it has not already been added then a short run aspect vector using the document content and the entity as described above in section E.3.2 is generated at 4020. At 4022 the aspect vector is added to the query and the node to which the query is pointing in the category organization is reset to the node that corresponds to its original categorization at 4024. Subsequently using this augmented query, act 4008 is repeated.

Variants of this method include limiting the number of context words used by a certain number of words or characters, for example, certain information retrieval systems accept queries up to a length of 256 characters in length, while others information retrieval systems accept queries that have a maximum of ten words.

3. The method according to claim 2, wherein the number of terms added is limited to a predefined number.

Col. 51, Ln. 64 - Col. 52, Ln. 6; Col. 50, Ln. 62-67; Col. 76, Ln. 36-37

The number of words added to the query may be limited in accordance with the maximum number of words permitted by the search engine.

Document Processing Flowchart

FIG. 40

At 4018, if the results are not accurate at 4016, then a determination is made whether a short run aspect vector has already been added to the query. If it has not already been added then a short run aspect vector using the document content and the entity as described above in section E.3.2 is generated at 4020. At 4022 the aspect vector is added to the query and the node to which the query is pointing in the category organization is reset to the node that corresponds to its original categorization at 4024. Subsequently using this augmented query, act 4008 is repeated.

The process then attempts the search again, using the more precise query.

Col. 51, Ln. 64 - Col. 52, Ln. 6

The process then attempts the search again, using the more precise query.

Remainder of Exhibit
Redacted