meric interface on a presentation device. Embodiments of the present invention can be used with the virtual keypads described in that application. Thus, the user may provide search input through physical keystrokes on a physical keypad or through virtual keystrokes on a virtual keypad.

[0046] As will be realized, the invention is capable of other and different embodiments and its several details may be capable of modifications in various respects, all without departing from the invention as set out in the appended claims. For example, records from the secondary data sources mentioned above can be retrieved in parallel with those taken from the top M records, and the records can be presented to the user as they become available. Accordingly, the drawings and description are to be regarded as illustrative in nature and not in a restrictive of limiting sense, with the scope of the application being indicated in the claims.

What is claimed is:

1. A user-interface system for incrementally finding and presenting one or more content items in response to keystrokes entered by a user on an input device having a known layout of overloaded keys selected from a set of key layouts, each overloaded key having a corresponding set of alphanumeric symbols, the system comprising:

a database stored in an electronically readable medium, the database containing content items and corresponding descriptive terms that characterize the content items;

input logic for receiving keystrokes from the user and building a string corresponding to incremental entries by the user, each item in the string having the set of alphanumeric symbols associated with a corresponding keystroke;

mapping logic, cooperating with the database, to map the string to the database to find the most likely content items corresponding to the incremental entries, the mapping logic operating in accordance with a defined error model, the error model corresponding to the known layout of overloaded keys of the input device; and

presentation logic for ordering the most likely content items identified by the mapping logic and for presenting on a display device the most likely content items in accordance with defined ordering criteria;

such that the user-interface system receives ambiguous entries from the user and presents the most likely matching content items.

2. The system of claim 1, wherein the error model includes generating typographic variants of the descriptive terms that characterize the content items.

3. The system of claim 1, wherein the error model includes generating orthographic variants of the descriptive terms that characterize the content items.

4. The system of claim 1, wherein the error model includes generating variants based on at least one of inserting, deleting, substituting, and transposing one or more characters of the descriptive terms that characterize the content items.

5. The system of claim 1, wherein the error model includes generating N-gram variants of the descriptive terms that characterize the content items, the N-gram variants including variants based on nonadjacent characters of the descriptive terms.

6. The system of claim 1, wherein the error model includes distance functions to assign error penalties to errors occurring in the string.

7. The system of claim 1, wherein the database contains pre-computed variants of the descriptive terms that characterize the content items and the mapping logic maps the incremental entries to the pre-computed variants.

8. The system of claim 7, wherein the pre-computed variants are encoded according to the known layout of overloaded keys of the input device.

9. The system of claim 1, wherein the mapping logic generates variants based on the incremental entries and uses the variants to find the most likely content items corresponding to the incremental entries.

10. The system of claim 1, wherein the mapping logic includes dynamic intersection logic, the dynamic intersection logic for:

identifying a first set of content items corresponding to a first set of alphanumeric symbols in the string;

identifying a second set of content items corresponding to a second set of alphanumeric symbols in the string; and

including content items appearing in both the first and second set of content items in the most likely content items corresponding to the incremental entries.

11. The system of claim 10, wherein the dynamic intersection logic is invoked when the number of most likely content items returned by the mapping logic without the dynamic intersection logic is below a predetermined threshold.

12. The system of claim 1, wherein the defined ordering criteria includes at least one of personalized user preferences, popularity of the content items, temporal relevance of the content items, location relevance of the content items, recency of the content items, and relevance of the descriptive terms to the content items.

13. The system of claim 1, wherein the string is mapped to the database according to a trie descend.

14. The system of claim 1, wherein the input device is an input constrained device.

15. The system of claim 1, wherein the input device is a wireless communication device, a mobile phone, a PDA, a personal media player, or a television remote control.

16. The system of claim 1, wherein the display device is a display constrained device.

17. The system of claim 1, wherein the display device is a wireless communication device, a mobile phone, a PDA, a personal media player, or a television.

18. The system of claim 1, wherein the input device and the display device are the same device.

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