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U.S. Patent 9,128,981

U.S. Patent 9,128,981 (“*Mimzi LLC*” or the “patent-at-issue”) was filed on March 21, 2015, and claims an earliest priority date on July 29, 2008. According to the paragraph in the specification entitled “Cross-Reference to Related Applications,” the patent-at-issue is a continuation of U.S. patent application Ser. No. 12/181,956, filed July 29, 2008, issued as U.S. Patent No. 8,775,454 on July 8, 2014. Claim 1 of the patent-at-issue describes a system designed to provide social media content to a user's mobile device based on their spoken requests and current location. It includes components such as a data input port for receiving spoken commands, a memory to store transcripts and associated metadata (like location), an interface to access a social network database, a processor to process requests and prioritize retrieved information based on social network ranking factors, and a communication port to relay relevant social media content to the user. The processor ranks the retrieved social network data, ensuring that the most pertinent information is delivered to the user according to predefined criteria.

The primary reference, U.S. Pat. App. 2008/0154612 (“*Cerence*”), was filed on February 12, 2007, and claims an earliest priority date on December 26, 2006. The patent application describes a method and system implemented on a mobile device with speech recognition capabilities, allowing users to conduct search requests through voice commands. Initially, the user's voice request is recognized, then transmitted to a remote server for processing, and the received search results are stored locally on the device. Subsequent search requests can be made using the stored data, eliminating the need for continuous external connections. The method includes actions such as analyzing multiple search requests to determine their popularity, enhancing speech recognition based on past requests, and storing time-sensitive information to ensure up-to-date results. Categories are assigned to stored search results, facilitating efficient retrieval based on relevance to subsequent search queries. The system accommodates various input methods, including speech, input keys, and graphical interfaces. Additionally, it presents a mobile device equipped with a processor system and memory storing code to execute these functionalities seamlessly.

The primary reference, U.S. Pat. App. 2008/0255977 (“*UTBK*”), was filed on April 4, 2008, and claims an earliest priority date on April 10, 2007. The patent application describes a method of receiving a search request from a user within the social network, specifying a distance parameter. Subsequently, listings of entities are identified based on the proximity of other users, who are prior customers of these entities, to the requesting user. These listings are then presented to the user on behalf of the respective entities.

The secondary reference, U.S. Pat. App. 2008/0102856 (“*R2 Solutions*”), was filed on November 1, 2006, and claims priority on the same date. The patent application describes a method of receiving a request for location information from a client device linked to a social network member, specifying a GPS coordinate. Following this, it provides the client device with a location name associated with another member of the social network, determined based on the provided GPS coordinate. Upon receiving another location name from the client device in response to the



initial response, it associates this additional location name with the same GPS coordinate and the social network member. This association enables subsequent requests for location information related to the GPS coordinate to include both the original location name and the additional one.

A sample claim chart comparing claim 1 of *Mimzi LLC* to *Cerence*, *UTBK*, and *R2 Solutions* is provided below.

US9128981 (“ <i>Mimzi LLC</i> ”)	A. US20080154612 (“ <i>Cerence</i> ”) B. US20080255977 (“ <i>UTBK</i> ”) C. US20080102856 (“ <i>R2 Solutions</i> ”)
<p>1.pre. A system for presenting social-network-provided outputs to a mobile-electronic-device user at a location associated with the user in response to the user's spoken request, comprising:</p>	<p>A. US20080154612 “1. A method implemented on a mobile device that includes speech recognition functionality, the method comprising: receiving an utterance from a user of the mobile device, the utterance including a spoken search request; . . .” <i>Cerence</i> at claim 1</p> <p>“The user of device 102 may choose to share his locally stored yellow pages with users of other devices, and conversely, receive others' yellow pages. This feature is especially useful when the user travels to a new location and is not familiar with businesses and services in that location. If the user knows the other person, this “social networking” offers a convenient means of receiving information from a trusted source. Social networking may be pairwise, or involve groups who provide permission to each other to share personal yellow pages. Users can augment the entries in their locally stored yellow pages with reviews, ratings, and personal comments relating to the listed businesses. Users can choose to share this additional information as part of their social networking options.” <i>Cerence</i> at par. 0087</p> <p>B. US20080255977 “1. A method, comprising: receiving a search request from a first user of a social network, the search request including a specified distance in the social network; . . .” <i>UTBK</i> at claim 1</p> <p>C. US20080102856 “As shown, system 100 of FIG. 1 includes network 145, wireless network 110, Geo-location Search Server (GSS) 106, mobile devices (client devices) 102-103, client device 101, GPS source 105, rating and review server 133, messenger server 132, and sponsored search/ad server 131.” <i>R2 Solutions</i> at par. 0039</p> <p>“In addition, client devices 101-103 may include another application that is configured to search for location information based on a social network and/or a GPS</p>

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1.pre. A system for presenting **social-network-provided outputs** to a mobile-electronic-device user at a location associated with the user **in response to the user's spoken request**, comprising:

coordinate(s). Client devices 101-103 may receive the GPS coordinate and/or **search criteria from a user of client devices** 101-103. Client devices 101-103 may enable the user to enter the GPS coordinate and/or search criteria with, for example, display 1100 of FIG. 11. Client devices 101-103 may send the GPS coordinate and/or search criteria to GSS 106 over networks 110/145, for further processing. Client devices 101-103 may **display the search results for locations at or near GPS coordinate** using, for example, display 1200 of FIG. 12 and display 1300 of FIG. 13. Client devices 101-103 may also **enable the user to update and/or refine location description (e.g., location name, tag, GPS coordinate, time associated with the location) in the social network**, using, for example, display 1000 of FIG. 10. Client devices 101-103 may send the updated location description to GSS 106 over network 110/145, for further processing.” *R2 Solutions* at par. 0048

“**Audio interface 252 is arranged to produce and receive audio signals such as the sound of a human voice**, music, or the like. For example, **audio interface 252 may be coupled to a speaker and microphone (not shown) to enable telecommunication with others and/or generate an audio acknowledgement for some action.**” *R2 Solutions* at par. 0069

1.a. a data input port configured to **receive speech information from the mobile-electronic-device user**;

A. US20080154612

“1. A method implemented on a **mobile device that includes speech recognition functionality**, the method comprising: **receiving an utterance from a user of the mobile device, the utterance including a spoken search request**; **using the speech recognition functionality to recognize that the utterance includes a spoken search request**;”

Cerence at claim 1

B. US20080255977

“1. A method, comprising:

receiving a search request from a first user of a social network, the search request including a specified distance in the social network;” *UTBK* at claim 1

C. US20080102856

“**Audio interface 252 is arranged to produce and receive audio signals such as the sound of a human voice**, music, or the like. For example, **audio interface 252 may be coupled to**

<p>(cont.) 1.a. a data input port configured to receive speech information from the mobile-electronic-device user;</p>	<p>a speaker and microphone (not shown) to enable telecommunication with others and/or generate an audio acknowledgement for some action.” <i>R2 Solutions</i> at par. 0069</p>
<p>1.b. a memory configured to store a transcript of the spoken request and metadata associated with the spoken request comprising at least the location during the spoken request;</p>	<p>A. US20080154612 “17. A mobile device that includes a processor system and memory storing code which when executed by the processor system causes the mobile device to perform the functions of: . . .” <i>Cerence</i> at claim 17</p> <p>“It also collects other information relating to the device and the user, which we refer to as metadata, and transmits both the speech features and the metadata over data connection 108 to transaction server 110.” <i>Cerence</i> at par. 0039</p> <p>“Metadata is of two types: explicit and implicit. Explicit metadata includes data such as: the make and model of device 102; a unique identifier of the user of the device; and the geographical location of the device, if that is available from built-in GPS functionality. Implicit metadata, which we refer to as side information, is contained within the audio captured by the phone.” <i>Cerence</i> at par. 0040</p> <p>B. US20080255977 “In FIG. 10, the communication device (301) is a form of a data processing system. The system (301) includes an interconnect (302) (e.g., bus and system core logic), which interconnects a microprocessor(s) (303) and memory (308). The microprocessor (303) is coupled to cache memory (304) in the example of FIG. 10.” <i>UTBK</i> at par. 0205</p> <p>C. US20080102856 “Audio interface 252 is arranged to produce and receive audio signals such as the sound of a human voice, music, or the like. For example, audio interface 252 may be coupled to a speaker and microphone (not shown) to enable telecommunication with others and/or generate an audio acknowledgement for some action.” <i>R2 Solutions</i> at par. 0069</p> <p>“Moreover data storage 242 may be used to store information such as data received over a network from another computing device, data output by a client application on client device 200, data input by a user of</p>

<p>(cont.) 1.b. a memory configured to store a transcript of the spoken request and metadata associated with the spoken request comprising at least the location during the spoken request;</p>	<p>client device 200, or the like. For example, data storage 242 may include data, including cookies, and/or other client device data sent by a network device. Data storage 242 may also include image files, social networking data, location information data, or the like, for display and/or use through various applications. Moreover, although data storage 242 is illustrated within memory 230, data storage 242 may also reside within other storage mediums, including, but not limited to CD-ROM/DVD-ROM drive 228, hard disk drive 227, or the like.” <i>R2 Solutions</i> at par. 0077</p>
<p>1.c. an interface port to a social network database, configured to transmit a request to mine information of the social network database based on the transcript and the metadata, and to receive social network information from the social network database based on the transmitted request;</p>	<p>A. US20080154612 “1. A method implemented on a mobile device that includes speech recognition functionality, the method comprising: . . . performing a subsequent search responsive to the subsequent search request to generate subsequent search results, wherein the subsequent search includes searching the stored search results; and . . .” <i>Cerence</i> at claim 1 “2. The method of claim 1, further comprising receiving a plurality of search requests, wherein the first-mentioned spoken search request is one of the plurality of received search requests, and the plurality of search requests is used to establish a popularity of each of the plurality of search requests.” <i>Cerence</i> at claim 2 “Metadata is of two types: explicit and implicit. Explicit metadata includes data such as: the make and model of device 102; a unique identifier of the user of the device; and the geographical location of the device, if that is available from built-in GPS functionality. Implicit metadata, which we refer to as side information, is contained within the audio captured by the phone.” <i>Cerence</i> at par. 0040 “Transaction server 110 serves as the hub of the voice-mediated mobile search service. It communicates with one or more speech recognition servers 112 (FIG. 1), one or more content providers 114 a, 114 b, 114 c, and with one or more advertising providers 116 a, 116 b, 116 c. It runs voice search management software 118 that is designed to optimize the quality of the content of information that is retrieved from content providers in response to the mobile device user's search request, and at the same time to maximize revenues for the parties involved. It achieves this by: using both the</p>

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1.c. an interface port to a social network database, configured to **transmit a request to mine information of the social network database based on the transcript and the metadata**, and **to receive social network information from the social network database based on the transmitted request**;

extracted speech features and the metadata to optimize the accuracy of the voice search query speech recognition; attempting to place each search into a predetermined category; exploiting any identified search category information, search results, and metadata to optimize the responsiveness of the search results it sends to the mobile device and to optimize the targeting of advertisements to the user; and to format results for display on a mobile, sound-enabled device.” *Cerence* at par. 0042

“The user of device 102 may choose to share his locally stored yellow pages with users of other devices, and conversely, receive others' yellow pages. **This feature is especially useful when the user travels to a new location and is not familiar with businesses and services in that location. If the user knows the other person, this “social networking” offers a convenient means of receiving information from a trusted source.** Social networking may be pairwise, or involve groups who provide permission to each other to share personal yellow pages. Users can augment the entries in their locally stored yellow pages with reviews, ratings, and personal comments relating to the listed businesses. Users can choose to share this additional information as part of their social networking options.” *Cerence* at par. 0087

B. US20080255977

“In one embodiment, **the social network includes a database that contains data representing the relations between a set of members.** In a social network, a member may be represented by a node; and a direct relation between two members is represented by a connection. **After the direct relations between members are specified, the database can be used to determine the relations between members that are indirectly connected.** For example, **the member may identify a friend's friend via the service of the database.”** *UTBK* at par. 0231

“In FIG. 12, the user interface includes a link (405) which allows the member to recommend people who the member knows. In one embodiment, **the comments, feedback, ratings of the prior customers are weighted or labeled or sorted based on the social distances between the customers and the advertiser/seller/service provider. Using the social network, a potential customer can find a personalized view of the information based on the social relations among the potential customer, the advertiser/seller/service provider**

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1.c. an interface port to a social network database, configured to **transmit a request to mine information of the social network database based on the transcript and the metadata**, and to receive social network information from the social network database based on the transmitted request;

and the prior customers who provided the comments, ratings, feedback, recommendations, etc. For example, **the trustworthiness of the comments, ratings, feedback, and recommendations can be rated, sorted and presented according to the social network structure (e.g., social distances, connections of a member of the social network, recommendations made by a member of the social network, etc.).**” *UTBK* at par. 0238

“In FIG. 13, **the recommendations from the members of the social network for the service providers in the selected category (e.g., accountant) are presented based on the social distances to those who make the recommendations.** For example, in FIG. 13, the member can select the tab (441) to view the accountants recommended by the friends of the member and select the tab (443) to view the accountants recommended by the friends of friends of the member.” *UTBK* at par. 0245

C. US20080102856

“**Audio interface 252 is arranged to produce and receive audio signals such as the sound of a human voice, music, or the like.** For example, **audio interface 252 may be coupled to a speaker and microphone (not shown) to enable telecommunication with others and/or generate an audio acknowledgement for some action.**” *R2 Solutions* at par. 0069

“LIS 354 may **search through the social network or request Social Network Manager (SNM) 356 to search through the social network for members associated with the requested location information.** In one embodiment, **LIS 354 may manage the location information remotely over network interface 310, by communicating with a location information service**, such as GLT server 133, rating and review server 133, and sponsored search/ad server 131 of FIG. 1. LIS 354 may employ a process such as described below in conjunction with FIGS. 4 and 6 to perform at least some of its actions.” *R2 Solutions* at par. 0090

“Process 600 of FIG. 6 begins at block 602, where **search results of location names and/or location descriptions are received based on a GPS coordinate and/or a search criterion/criteria.** In one embodiment, **the search results may be requested by a member of a social network through a client device, and the GPS coordinate may be associated**

<p>(cont.) 1.c. an interface port to a social network database, configured to transmit a request to mine information of the social network database based on the transcript and the metadata, and to receive social network information from the social network database based on the transmitted request;</p>	<p>with a geographical location of the client device. In one embodiment, a request for location information in the social network associated with the GPS coordinate may be received from the client device associated with the member of the social network. In response to the request for the location information, a location name associated with another member of a social network based on the GPS coordinate may be provided to the client device. In one embodiment, the searching/requesting/providing may be performed by process 400 of FIG. 4 and/or signal flow 800 of FIG. 8.” <i>R2 Solutions</i> at par. 0144</p>
<p>1.d. at least one processor configured to transmit the request through the interface port dependent on at least the transcript and the metadata, to receive the social network information from the interface port; and</p>	<p>A. US20080154612 “17. A mobile device that includes a processor system and memory storing code which when executed by the processor system causes the mobile device to perform the functions of: . . . sending a representation of the spoken search request to a remote server over a wireless data connection; receiving search results over the wireless data connection that are responsive to the search request;” <i>Cerence</i> at claim 17</p> <p>B. US20080255977 “In FIG. 10, the communication device (301) is a form of a data processing system. The system (301) includes an interconnect (302) (e.g., bus and system core logic), which interconnects a microprocessor(s) (303) and memory (308). The microprocessor (303) is coupled to cache memory (304) in the example of FIG. 10.” <i>UTBK</i> at par. 205</p> <p>“1. A method, comprising: receiving a search request from a first user of a social network, the search request including a specified distance in the social network;” <i>UTBK</i> at claim 1</p> <p>C. US20080102856 “11. The network device of claim 10, wherein the processor is further operative to perform actions comprising: providing to the client device a selection list of possible location names based on a history of location names entered at a location within a proximity to the geographical coordinate and at a time within a range of a local time associated with the geographical coordinate, wherein the</p>

<p>(cont.) 1.d. at least one processor configured to transmit the request through the interface port dependent on at least the transcript and the metadata, to receive the social network information from the interface port; and</p>	<p>received other location name is selected from the selection list.” <i>R2 Solutions</i> at claim 11</p> <p>“Location manager 280 may be configured to enable a user of client device 200 to search for location information based on the user's membership in a social network, a GPS coordinate associated with client device 200 and/or other search criteria. LM 280 may communicate with a geo-location search server such as GSS 106 of FIG. 1, over network interface 250, to request a search result, or the like. Display 1100 of FIG. 11 shows an example of an interface that LM 280 may present to the user to enable entering the search criteria.” <i>R2 Solutions</i> at par. 0081</p>
<p>1.e. a communication port configured to communicate at least a portion of the social-network information to the user,</p>	<p>A. US20080154612 “1. A method implemented on a mobile device that includes speech recognition functionality, the method comprising: . . . presenting the subsequent search results on the mobile device.” <i>Cerence</i> at claim 1</p> <p>B. US20080255977 “1. A method, comprising: . . . in response to the search request, identifying listings of a plurality of entities based at least in part on identifying one or more second users within the specified distance from the first user in the social network, the one or more second users being priori customers of the entities; and presenting the listings to the first user on behalf of the entities.” <i>UTBK</i> at claim 1</p> <p>C. US20080102856 “Client device 101 may include virtually any computing device capable of communicating over a network to send and receive information, including social networking information, or the like. The set of such devices may include devices that typically connect using a wired or wireless communications medium such as personal computers, multiprocessor systems, microprocessor-based or programmable consumer electronics, network PCs, or the like. Client device 101 may be configured to perform at least some of the same operations as mobile devices 102-103.” <i>R2 Solutions</i> at par. 0047</p>

1.f. wherein **the social network database comprises a plurality of social network records**, the at least one processor being further configured to **rank the received social network information comprising a plurality of received social network records dependent on at least one social network ranking factor**, the communication port being further configured to **output at least a portion of the social network records in a manner dependent on the at least one social network ranking factor**.

A. US20080154612

“Even if transaction server is unable to determine a search category by inspecting a generic search result, it **“scrapes” the results by extracting underlined or bolded portions of a result page and phone numbers**. For results from generic content providers, such as Google, **the transaction server displays a small number of the top-ranked results and as much text as can be presented legibly and attractively on the display of mobile device** 102.” *Cerence* at par. 0065

“**Search management software** 118 **can also prioritize items within the search results according to the factors** listed in the previous paragraph. For example, **if the user category is female and the search is for clothes, the search management software assigns a higher priority to search result items relating to women's clothes than to men's clothes. It uses the degree of responsiveness of each search result item to the search request in light of the user category to rank order the results. It then tags each items among the search results that exceed the threshold degree of responsiveness with a rank number**. The **mobile device can then display the received search result items in rank order, with the most responsive result at the top of the list of displayed results**.” *Cerence* at par. 0071

B. US20080255977

“In FIG. 18, **the listing also includes a rating that is determined based on the ratings given by prior customers of the provider**. In one embodiment, **the rating is a weighted average based on the social distance between the prior customers and the user**. For example, **the rating by a friend can be weighted more than the rating by a friend of the friend**. In one embodiment, **the rating is weighted according to the trustworthiness measurement computed based on the social network**. Thus, **the rating is computed from the social perspective of the user**.” *UTBK* at par. 0301

“In one embodiment, **the listings in the search result can be sorted according to the ratings or recommendations of the friends of the users using the data representing the social network**.” *UTBK* at par. 0285

“In one embodiment, **the social network system collects information for the automated evaluation of a value for a trustworthiness indicator of a friend of member of the social network structure, which can be further used to**

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1.f. wherein the social network database comprises a plurality of social network records, the at least one processor being further configured to **rank the received social network information comprising a plurality of received social network records dependent on at least one social network ranking factor**, the communication port being further configured to **output at least a portion of the social network records in a manner dependent on the at least one social network ranking factor**.

compute the value for the trustworthiness indicator for indirectly connected members. For example, **a member may rate the trustworthiness of feedbacks, recommendations, ratings, etc., of other members**. In one embodiment, **the social network system uses the trustworthiness indicator to sort information such as feedbacks, recommendations and/or to select advertisements for presentation**. The system may or may not **display the value of the trustworthiness indicator to the users.**” *UTBK* at par. 0238

C. US20080102856

“In one embodiment, **a relevancy score may be updated for an association between the other location name and a GPS coordinate**. The update may occur for the member and/or a community of the member. For example, **in social network 1400 of FIG. 14, relevancy scores for associations between GPS coordinate 1440 and location names 1450-1451 represent how closely GPS coordinate 1440 is identified by location names 1450-1451 for member 1401 and/or community for member 1401**. As shown, the association between location name 1451 and GPS coordinate 1440 is more relevant for member 1401.” *R2 Solutions* at par. 0151