Summary of Embodiments

[005] Various embodiments discussed herein provide systems and methods for identifying and suggesting emoticons for segments of texts. Some systems and methods may be utilized during a user activity on a computing device including, without limitation, instant messaging, participating in online chat rooms, drafting e-mails, posting web blogs, or posting to web forums.

[006] An exemplary method comprises receiving a set of segments from a text field, analyzing the set of segments to determine at least one of a target subtext or a target meaning associated with the set of segments, and identifying a set of candidate emoticons where each candidate emoticon in the set of candidate emoticons has an association between the candidate emoticon and at least one of the target subtext or the target meaning. The method may further comprise presenting the set of candidate emoticons for entry selection at a current position of an input cursor, receiving an entry selection for a set of selected emoticons from the set of candidate emoticons, and inserting the set of selected emoticons into the text field at the current position of the input cursor. The set of segments may comprise one or more segments of interest selected relative to a current position of an input cursor in the text field, the set of candidate emoticons may comprise one or more candidate emoticons, and the set of selected emoticons may comprise one or more selected emoticons. Depending on the embodiment, analyzing the set of segments may comprise semantic analysis of the set of segments.

[007] For some embodiments, each association may comprise a statistical usage of the candidate emoticon with at least one of the target subtext or the target meaning. Additionally, for some embodiments, the method may further comprise updating the statistical usage of the candidate emoticons based on the entry selection for the set of selected emoticons. Depending on the embodiment, the statistical usage may be based on usage by a single user or by a plurality of users.

[008] Presenting the set of emoticons for entry selection may involve displaying the emoticon, for entry selection, at or near the current position of the input cursor. Presenting the set of candidate emoticons for entry selection may comprise displaying the set of candidate emoticons, for entry selection, on a physical input device or a virtual input device (e.g., on-screen keyboard, or a projected keyboard), wherein the physical input device and the displayed input interface are configured to execute the entry selection. Depending on the embodiment,

the virtual input device may be displayed by a display device that is also displaying the text field. Additionally, the virtual input device may be displayed in close proximity to the text field.

[009] In some embodiments, the method may further comprise identifying the set of segments using syntactical analysis. Each segment of interest may comprise at least one of a word, a sentence fragment, a sentence, a phrase, or a passage that precedes or follows a current position of an input cursor.

[0010] In particular embodiments, identifying the set of candidate emoticons may be further based on at least a user preference, user-related information, or recipient-related information. The user-related information may include a user interest, a user ethnicity, a user religion, a user geographic location, a user age, a user relational status, and a user occupation. The recipient-related information may include a recipient's relation to a user, a recipient interest, a recipient ethnicity, a recipient religion, a recipient geographic location, a recipient age, a recipient relational status, and a recipient occupation.

[0011] An exemplary system comprises a processor, a display module, an input module, a segment analysis module, an emoticon search module, an emoticon suggestion module, and an emoticon selection module. The display module may be configured to display a text field and one or more segments entered into the text field.

[0012] The input module may be configured to receive segment input from a user and to enter the segment input into the text field at an input cursor. The segment analysis module may be configured to receive a set of segments from the text field, wherein the set of segments comprises one or more segments of interest selected relative to a current position of the input cursor in the text field. The segment analysis module may be further configured to use the processor to analyze the set of segments to determine at least one of a target subtext or a target meaning associated with the set of segments. The emoticon search module may be configured to identify a set of candidate emoticons, wherein each candidate emoticon in the set of candidate emoticons has an association between the candidate emoticon and at least one of the target subtext or the target meaning, and wherein the set of candidate emoticons comprises one or more candidate emoticons. The emoticon suggestion module may be configured to present the set of candidate emoticons through the display module for entry selection at the current position of the input cursor. The emoticon selection module may be configured to receive

from the input module an entry selection for a set of selected emoticons from the set of candidate emoticons, wherein the set of selected emoticons comprises one or more selected emoticons. The emoticon selection module may be further configured to insert the set of selected emoticons into the text field at the current position of the input cursor.

[0013] In some embodiments, the system further comprises an emoticon datastore comprising one or more emoticons capable of entry into the text field, and wherein the emoticon search module is further configured to identify a set of candidate emoticons on the emoticon datastore.

[0014] In various embodiments, each association may comprise a statistical usage of the candidate emoticon with at least one of the target subtext or the target meaning, and the emoticon selection module may be further configured to update the statistical usage of the candidate emoticons based on the entry selection for the set of selected emoticons.

[0015] In some embodiments, presenting the set of emoticons through the display module for entry selection may comprise displaying the emoticon, for entry selection, at or near the current position of the input cursor. The input module may comprise a physical input device or a virtual input device, wherein the physical input device and the virtual input interface are configured to execute the entry selection.

[0016] Other features and aspects of some embodiments will become apparent from the following detailed description, taken in conjunction with the accompanying drawings, which illustrate, by way of example, the features in accordance with various embodiments.

Summary

[005] Various embodiments discussed herein provide systems and methods for identifying and suggesting emoticons for segments of texts. Some systems and methods may be utilized during a user activity on a computing device including, without limitation, instant messaging, participating in online chat rooms, drafting e-mails, posting web blogs, or posting to web forums.

[006] According to a first aspect of the present invention, there is provided a method comprising:

selecting one or more segments from a text field, wherein each of the segments is in proximity to a current position of an input cursor in the text field;

analyzing the segments to determine a respective context for each of the segments, wherein the context is at least one of a respective target subtext or a respective target meaning of the segment;

for one or more of the segments, identifying a respective candidate emoticon for the segment based on an association between the candidate emoticon and the context of the segment, the association exceeding a threshold value and being based on, at least, statistical usage of the candidate emoticon for the context by one or more users, wherein a strength of the association varies according to the statistical usage;

providing one or more of the candidate emoticons for user selection, the candidate emoticons for user selection being based on at least one of a user preference, user-related information, and recipient-related information;

receiving user selection of one or more of the provided emoticons and inserting the selected emoticons into the text field at the current position of the input cursor; and

updating the statistical usage of at least one of the provided emoticons based on the user selection.

[007]

[008]

[009] According to a second aspect of the present invention, there is provide a system comprising:

one or more computers programed to perform operations comprising:

selecting one or more segments from a text field, wherein each of the segments is in proximity to a current position of an input cursor in the text field;

analyzing the segments to determine a respective context for each of the segments, wherein the context is at least one of a respective target subtext or a respective target meaning of the segment;

for one or more of the segments, identifying a respective candidate emoticon for the segment based on an association between the candidate emoticon and the context of the segment, the association exceeding a threshold value and being based on, at least, statistical usage of the candidate emoticon for the context by one or more users, wherein a strength of the association varies according to the statistical usage;

providing one or more of the candidate emoticons for user selection, the candidate emoticons for user selection being based on at least one of a user preference, user-related information, and recipient-related information;

receiving user selection of one or more of the provided emoticons and inserting the selected emoticons into the text field at the current position of the input cursor; and

updating the statistical usage of at least one of the provided emoticons based on the user selection.

[0010]

[0011]

[0012]

[0013] According to a third aspect of the present invention, there is provided a non-transitory computer-readable medium having instruction stored there on that, when executed by one or more computers, causes the computers to perform operations comprising:

selecting one or more segments from a text field, wherein each of the segments is in proximity to a current position of an input cursor in the text field;

analyzing the segments to determine a respective context for each of the segments, wherein the context is at least one of a respective target subtext or a respective target meaning of the segment;

for one or more of the segments, identifying a respective candidate emoticon for the segment based on an association between the candidate emoticon and the context of the segment, the association exceeding a threshold value and being based on, at least, statistical usage of the candidate emoticon for the context by one or more users, wherein a strength of the association varies according to the statistical usage;

providing one or more of the candidate emoticons for user selection, the candidate emoticons for user selection being based on at least one of a user preference, user-related information, and recipient-related information;

receiving user selection of one or more of the provided emoticons and inserting the selected emoticons into the text field at the current position of the input cursor; and

updating the statistical usage of at least one of the provided emoticons based on the user selection.

[0014] Other features and aspects of some embodiments will become apparent from the following detailed description, taken in conjunction with the accompanying drawings, which illustrate, by way of example, the features in accordance with various embodiments.

[0015]

[0016]

Claims

What is claimed is:

1. A method, comprising:

receiving a set of segments from a text field, wherein the set of segments comprises one or more segments of interest selected relative to a current position of an input cursor in the text field;

analyzing the set of segments to determine at least one of a target subtext or a target meaning associated with the set of segments;

identifying a set of candidate emoticons, wherein each candidate emoticon in the set of candidate emoticons has an association between the candidate emoticon and at least one of the target subtext or the target meaning, and wherein the set of candidate emoticons comprises one or more candidate emoticons;

presenting the set of candidate emoticons for entry selection at the current position of the input cursor;

receiving an entry selection for a set of selected emoticons from the set of candidate emoticons, wherein the set of selected emoticons comprises one or more selected emoticons; and

inserting the set of selected emoticons into the text field at the current position of the input cursor.

2. The method of claim 1, wherein each association comprises a statistical usage of the candidate emoticon with at least one of the target subtext or the target meaning.

3. The method of claim 2, wherein the statistical usage is based on usage by a single user or by a plurality of users.

4. The method of claim 2, further comprising updating the statistical usage of the candidate emoticons based on the entry selection for the set of selected emoticons.

5. The method of claim 1, wherein analyzing the set of segments comprises semantic analysis of the set of segments.

6. The method of claim 1, wherein presenting the set of emoticons for entry selection comprises displaying the emoticon, for entry selection, at or near the current position of the input cursor.

7. The method of claim 1, wherein presenting the set of candidate emoticons for entry selection comprises displaying the set of candidate emoticons, for entry selection, on a physical input device or a virtual input device, wherein the physical input device and the displayed input interface are configured to execute the entry selection.

8. The method of claim 7, wherein the virtual input device is displayed in close proximity to the text field.

9. The method of claim 1, wherein each segment of interest comprises at least one of a word, a sentence fragment, a sentence, a phrase, or a passage that precedes or follows the current position of the input cursor.

10. The method of claim 1, wherein identifying the set of candidate emoticons is further based on at least a user preference, a user-related information, or a recipient-related information.

11. The method of claim 10, wherein the user-related information includes a user interest, a user ethnicity, a user religion, a user geographic location, a user age, a user relational status, and a user occupation.

12. The method of claim 10, wherein the recipient-related information includes a recipient's relation to a user, a recipient interest, a recipient ethnicity, a recipient religion, a recipient geographic location, a recipient age, a recipient relational status, and a recipient occupation.

13. A system, comprising:

a processor;

a display module configured to display a text field and one or more segments entered into the text field;

an input module configured to receive segment input from a user and to enter the segment input into the text field at an input cursor;

a segment analysis module configured to:

receive a set of segments from the text field, wherein the set of segments comprises one or more segments of interest selected relative to a current position of the input cursor in the text field, and

use the processor to analyze the set of segments to determine at least one of a target subtext or a target meaning associated with the set of segments;

an emoticon search module configured to identify a set of candidate emoticons, wherein each candidate emoticon in the set of candidate emoticons has an association between the candidate emoticon and at least one of the target subtext or the target meaning, and wherein the set of candidate emoticons comprises one or more candidate emoticons;

an emoticon suggestion module configured to present the set of candidate emoticons through the display module for entry selection at the current position of the input cursor; and

an emoticon selection module configured to:

receive from the input module an entry selection for a set of selected emoticons from the set of candidate emoticons, wherein the set of selected emoticons comprises one or more selected emoticons, and

insert the set of selected emoticons into the text field at the current position of the input cursor.

14. The system of claim 13, further comprising an emoticon datastore comprising one or more emoticons capable of entry into the text field, and wherein the emoticon search module is further configured to identify the set of candidate emoticons on the emoticon datastore.

15. The system of claim 13, wherein each association comprises a statistical usage of the candidate emoticon with at least one of the target subtext or the target meaning.

16. The system of claim 15, wherein the statistical usage is based on usage by a single user or by a plurality of users.

17. The system of claim 15, wherein the emoticon selection module is further configured to update the statistical usage of the candidate emoticons based on the entry selection for the set of selected emoticons.

18. The system of claim 13, wherein analyzing the set of segments comprises semantic analysis of the set of segments.

19. The system of claim 13, wherein presenting the set of emoticons through the display module for entry selection comprises displaying the emoticon, for entry selection, at or near the current position of the input cursor.

20. The system of claim 13, wherein presenting the set of candidate emoticons through the display module for entry selection comprises displaying the set of candidate emoticons, for entry selection, through the input module.

21. The system of claim 20, wherein the input module comprises a physical input device or a virtual input device, wherein the physical input device and the virtual input interface are configured to execute the entry selection.

22. The system of claim 21, wherein the virtual input device is displayed in close proximity to the text field.

23. The system of claim 13, wherein each segment of interest comprises at least one of a word, a sentence fragment, a sentence, a phrase, or a passage that precedes or follows the current position of the input cursor.

24. The system of claim 13, wherein identifying the set of candidate emoticons is further based on at least a user preference, a user-related information, or a recipient-related information.

25. The system of claim 24, wherein the user-related information includes a user interest, a user ethnicity, a user religion, a user geographic location, a user age, a user relational status, and a user occupation.

26. The system of claim 24, wherein the recipient-related information includes a recipient's relation to a user, a recipient interest, a recipient ethnicity, a recipient religion, a recipient geographic location, a recipient age, a recipient relational status, and a recipient occupation.

27. A system, comprising:

a means for receiving a set of segments from a text field, wherein the set of segments comprises one or more segments of interest selected relative to a current position of an input cursor in the text field;

a means for analyzing the set of segments to determine at least one of a target subtext or a target meaning associated with the set of segments;

a means for identifying a set of candidate emoticons, wherein each candidate emoticon in the set of candidate emoticons has an association between the candidate emoticon and at least one of the target subtext or the target meaning, and wherein the set of candidate emoticons comprises one or more candidate emoticons;

a means for presenting the set of candidate emoticons for entry selection at the current position of the input cursor;

a means for receiving an entry selection for a set of selected emoticons from the set of candidate emoticons, wherein the set of selected emoticons comprises one or more selected emoticons; and

a means for inserting the set of selected emoticons into the text field at the current position of the input cursor.

CLAIMS

1. A method comprising:

selecting one or more segments from a text field, wherein each of the segments is in proximity to a current position of an input cursor in the text field;

analyzing the segments to determine a respective context for each of the segments, wherein the context is at least one of a respective target subtext or a respective target meaning of the segment;

for one or more of the segments, identifying a respective candidate emoticon for the segment based on an association between the candidate emoticon and the context of the segment, the association exceeding a threshold value and being based on, at least, statistical usage of the candidate emoticon for the context by one or more users, wherein a strength of the association varies according to the statistical usage;

providing one or more of the candidate emoticons for user selection, the candidate emoticons for user selection being based on at least one of a user preference, user-related information, and recipient-related information;

receiving user selection of one or more of the provided emoticons and inserting the selected emoticons into the text field at the current position of the input cursor; and

updating the statistical usage of at least one of the provided emoticons based on the user selection.

2. The method of claim 1 wherein analyzing the segments comprises performing semantic analysis of the segments.

3. The method of claim 1 wherein providing one or more of the candidate emoticons for user selection comprises displaying the candidate emoticons at or near the current position of the input cursor.

4. The method of claim 1 wherein providing one or more of the candidate emoticons for user selection comprises displaying the set of candidate emoticons on a physical input device or a virtual input device, wherein the physical input device and the virtual input device are configured to receive the entry selection.

5. The method of claim 4 wherein the virtual input device is displayed in close proximity to the text field.

6. The method of claim 1 wherein a particular segment comprises at least one of a word, a sentence fragment, a sentence, a phrase, and a passage that precedes or follows the current position of the input cursor.

7. The method of claim 1 wherein the user-related information includes a user interest, a user ethnicity, a user religion, a user geographic location, a user age, a user relational status, and a user occupation.

8. The method of claim 1 wherein the recipient-related information includes a recipient's relation to a user, a recipient interest, a recipient ethnicity, a recipient religion, a recipient geographic location, a recipient age, a recipient relational status, and a recipient occupation.

9. A system comprising:

one or more computers programed to perform operations comprising:

selecting one or more segments from a text field, wherein each of the segments is in proximity to a current position of an input cursor in the text field;

analyzing the segments to determine a respective context for each of the segments, wherein the context is at least one of a respective target subtext or a respective target meaning of the segment;

for one or more of the segments, identifying a respective candidate emoticon for the segment based on an association between the candidate emoticon and the context of the segment, the association exceeding a threshold value and being based on, at least, statistical usage of the candidate emoticon for the context by one or more users, wherein a strength of the association varies according to the statistical usage;

providing one or more of the candidate emoticons for user selection, the candidate emoticons for user selection being based on at least one of a user preference, user-related information, and recipient-related information;

receiving user selection of one or more of the provided emoticons and inserting the selected emoticons into the text field at the current position of the input cursor; and

updating the statistical usage of at least one of the provided emoticons based on the user selection.

10. The system of claim 9 wherein analyzing the segments comprises performing semantic analysis of the segments.

11. The system of claim 9 wherein providing one or more of the candidate emoticons for user selection comprises displaying the candidate emoticons at or near the current position of the input cursor.

12. The system of claim 9 wherein providing one or more of the candidate emoticons for user selection comprises displaying the set of candidate emoticons on a physical input device or a virtual input device, wherein the physical input device and the virtual input device are configured to receive the entry selection.

13. The system of claim 12 wherein the virtual input device is displayed in close proximity to the text field.

14. The system of claim 9 wherein a particular segment comprises at least one of a word, a sentence fragment, a sentence, a phrase, and a passage that precedes or follows the current position of the input cursor.

15. The system of claim 9 wherein the user-related information includes a user interest, a user ethnicity, a user religion, a user geographic location, a user age, a user relational status, and a user occupation.

16. The system of claim 9 wherein the recipient-related information includes a recipient's relation to a user, a recipient interest, a recipient ethnicity, a recipient religion, a recipient geographic location, a recipient age, a recipient relational status, and a recipient occupation.

17. A non-transitory computer-readable medium having instruction stored there on that, when executed by one or more computers, causes the computers to perform operations comprising:

selecting one or more segments from a text field, wherein each of the segments is in proximity to a current position of an input cursor in the text field;

analyzing the segments to determine a respective context for each of the segments, wherein the context is at least one of a respective target subtext or a respective target meaning of the segment;

for one or more of the segments, identifying a respective candidate emoticon for the segment based on an association between the candidate emoticon and the context of the segment, the association exceeding a threshold value and being based on, at least, statistical usage of the candidate emoticon for the context by one or more users, wherein a strength of

the association varies according to the statistical usage;

providing one or more of the candidate emoticons for user selection, the candidate emoticons for user selection being based on at least one of a user preference, user-related information, and recipient-related information;

receiving user selection of one or more of the provided emoticons and inserting the selected emoticons into the text field at the current position of the input cursor; and

updating the statistical usage of at least one of the provided emoticons based on the user selection.

18. The computer-readable medium of claim 17 wherein analyzing the segments comprises performing semantic analysis of the segments.

19. The computer-readable medium of claim 17 wherein providing one or more of the candidate emoticons for user selection comprises displaying the candidate emoticons at or near the current position of the input cursor.

20. The computer-readable medium of claim 17 wherein providing one or more of the candidate emoticons for user selection comprises displaying the set of candidate emoticons on a physical input device or a virtual input device, wherein the physical input device and the virtual input device are configured to receive the entry selection.

21. The computer-readable medium of claim 20 wherein the virtual input device is displayed in close proximity to the text field.

22. The computer-readable medium of claim 17 wherein a particular segment comprises at least one of a word, a sentence fragment, a sentence, a phrase, and a passage that precedes or follows the current position of the input cursor.

23. The computer-readable medium of claim 17 wherein the user-related information includes a user interest, a user ethnicity, a user religion, a user geographic location, a user age, a user relational status, and a user occupation.

24. The computer-readable medium of claim 17 wherein the recipient-related information includes a recipient's relation to a user, a recipient interest, a recipient ethnicity, a recipient religion, a recipient geographic location, a recipient age, a recipient relational status, and a recipient occupation.