in the future dialog session, that is unrelated to the content provided in the previous dialog session.

[0005] As one example, the future dialog session may be initiated by the user and may prompt the automated assistant to perform some "routine action" such as providing a summary of the user's calendar entries, providing news stories to the user, playing music for the user, etc. The automated assistant may perform some or all of the routine action, then provide the prompt. This may add some variance to the routine action and/or enhance the user experience by injecting a conversational prompt into the routine action. Moreover, as mentioned above, a user's feedback (direct or indirect) that is provided in response to the prompt may be utilized to influence future suggestions or other content subsequently provided, by the automated assistant, for presentation to the user – thereby increasing the likelihood that subsequent content provided to the user by the automated assistant is relevant to the user. Such an improvement in relevance of content provided by the automated assistant may enable desired content to be provided to the user more quickly, which may decrease various computational resources (and, if the automated assistant is not integrated with the client device, communication resource) that may be consumed in a more prolonged dialog that may otherwise be required to identify the desired content.

[0006] In some implementations, a method performed by one or more processors is provided that includes, as part of a dialog session between a user and an automated assistant implemented by one or more of the processors remote from one or more client computing devices of the user: receiving spoken natural language input that is based on user interface input provided by the user via a user interface input device of the one or more client computing devices; and providing, as a reply by the automated assistant to the spoken natural language input, content that is responsive to the spoken natural language input. The content is provided for presentation to the user via a user interface output device and the content includes at least one content parameter selected by the automated assistant from a plurality of candidate content parameters. The method further includes, as part of an additional dialog session between the user and the automated assistant that is temporally separated from the dialog session and is initiated by the user with additional spoken natural language input that is

unrelated to the content of the dialog session: providing a prompt that solicits feedback on the selected content parameter, wherein providing the prompt is contingent on the user having initiated the additional dialog session; wherein the prompt is provided for presentation to the user via the user interface output device or an additional user interface output device of the one or more client computing devices, and wherein the prompt is generated to solicit feedback on the content parameter based on the content parameter being previously selected by the automated assistant and previously provided for presentation to the user as part of the dialog session, based on providing the prompt, preemptively activating a microphone, the microphone being the user interface input device or an additional user interface input device of the one or more client computing devices, and receiving additional input that is responsive to the prompt, the additional input being based on additional user interface input provided by the user via the microphone; and using the additional input to influence a value stored in association with the content parameter. The value stored in association with the content parameter influences future providing of further content that includes the content parameter. The prompt is provided for presentation to the user via the user interface output device or an additional user interface output device. The prompt is generated to solicit feedback on the content parameter based on the content parameter being previously selected by the automated assistant and previously provided for presentation to the user as part of the dialog session. The additional input that is responsive to the prompt is based on additional user interface input provided by the user via the user interface input device or an additional user interface input device

[0007] These and other implementations of technology disclosed herein may optionally include one or more of the following features.

[0008] In some implementations, the user initiates the additional dialog session with additional natural language input that is unrelated to the content of the previous dialog session. In some of those implementations, the method further includes, as part of the additional dialog session: providing additional dialog session output that is responsive to the additional natural language input and that is also unrelated to the content of the previous dialog session. Providing the prompt may occur following providing the additional dialog session output. In some versions of those implementations, the method further includes determining that one or

more criteria are satisfied by at least one of: the additional natural language input, and the additional dialog session output. Providing the prompt may be further based on determining that the criteria are satisfied. The criteria may include, for example, the additional dialog session output being of a certain semantic type and/or an occurrence in the user prompt of at least one n-gram of a set of criteria n-grams.

[0009] In some implementations, the content is a suggestion to be acted upon by the user in the future and the method further includes determining that the user acted upon the suggestion after providing the content that includes the content parameter. Providing the prompt may be further based on determining that the user acted upon the suggestion.

[0010] In some implementations, the user interface input device or the additional user interface input device used to generate the additional input that is responsive to the prompt includes a microphone, and the method further includes: based on providing the prompt, preemptively activating at least one component configured to process the user interface input provided via the microphone.

[0011] In some implementations, the user initiates the additional dialog session and providing the prompt is contingent on the user having initiated the additional dialog session.

[0012] In some implementations, the method further includes, as part of the additional dialog session: prior to providing the prompt, providing additional dialog session output. Providing the prompt may occur following providing the additional dialog session output.

[0013] In some implementations, the method further includes: identifying an additional content parameter provided to the user as part of an additional prior dialog session between the user and the automated assistant; and determining, based on one or more criteria, to provide the prompt based on the content parameter instead of an alternative prompt that is based on the additional content parameter. In some of those implementations, the one or more criteria include corresponding temporal proximities of the providing of the content parameter and of the providing of the additional content parameter. In some of those implementations, the one or more criteria additionally or alternatively include semantic types assigned to the content parameter and the additional content parameter.

[0014] In some implementations, the content includes a suggestion for a particular physical location and for a particular item consumable at the particular location, and the content parameter identifies the particular item.

[0015] In some implementations, the content includes a suggestion for a particular physical location, and the content parameter identifies a category to which the particular physical location belongs.

[0016] In some implementations, the input and the additional input are both generated via the user interface input device and the content and the feedback prompt are both provided for presentation via the user interface output device. In some of those implementations, the user interface input device includes a microphone of a single device and the user interface output device includes a speaker of the single device.

[0017] In some implementations, the input is generated via the user interface input device of a first computing device, the content is provided for presentation via the user interface output device of the first computing device, and the prompt is provided for presentation via the additional user interface output device of an additional computing device.

[0018] In some implementations, a method performed by one or more processors is provided that includes: identifying, from a computer readable medium, a stored content parameter of content previously provided to a user as part of a prior dialog session between a user and an automated assistant implemented by one or more of the processors remote from one or more client computing devices of the user. The method further includes, as part of an additional dialog session between the user and the automated assistant that is temporally separated from the dialog session and is initiated by the user with additional spoken natural language input that is unrelated to the content of the prior dialog session: providing a prompt that solicits feedback on the content parameter wherein providing the prompt is contingent on the user having initiated the additional dialog session. The prompt is provided for presentation to the user via a user interface output device of the one or more client computing devices, and the prompt is generated to solicit feedback on the content parameter based on the content parameter being previously provided for presentation to the user as part of the prior dialog session, based on providing the prompt, preemptively activating

a microphone of the one or more client computing devices. The method further includes, as part of the additional dialog session: receiving additional input that is responsive to the prompt, the additional input being based on additional user interface input provided by the user via the microphone; and using the additional input to influence a value stored in association with the content parameter. The additional input is based on additional user interface input provided by the user via a user interface input device of the computing device, and the stored value influences future providing of further content that includes the content parameter.

[0019] In addition, some implementations include one or more processors of one or more computing devices, where the one or more processors are operable to execute instructions stored in associated memory, and where the instructions are configured to cause performance of any of the aforementioned methods. Some implementations also include one or more non-transitory computer readable storage media storing computer instructions executable by one or more processors to perform any of the aforementioned methods.

[0020] It should be appreciated that all combinations of the foregoing concepts and additional concepts described in greater detail herein are contemplated as being part of the subject matter disclosed herein. For example, all combinations of claimed subject matter appearing at the end of this disclosure are contemplated as being part of the subject matter disclosed herein.

CLAIMS

What is claimed is:

1. A method implemented by one or more processors, comprising:

as part of a dialog session between a user and an automated assistant implemented by one or more of the processors remote from one or more client computing devices of the user:

receiving spoken natural language input that is based on user interface input provided by the user via a user interface input device of the one or more client computing devices, and

providing, as a reply by the automated assistant to the spoken natural language input, content that is responsive to the spoken natural language input,

wherein the content is provided for presentation to the user via a user interface output device of the one or more client computing devices, and

wherein the content includes at least one content parameter selected by the automated assistant from a plurality of candidate content parameters;

as part of an additional dialog session between the user and the automated assistant that is temporally separated from the dialog session and is initiated by the user with additional spoken natural language input that is unrelated to the content of the dialog session:

providing a prompt that solicits feedback on the selected content parameter, wherein providing the prompt is contingent on the user having initiated the additional dialog session,

wherein the prompt is provided for presentation to the user via the user interface output device or an additional user interface output device of the one or more client computing devices, and

wherein the prompt is generated to solicit feedback on the content parameter based on the content parameter being previously

selected by the automated assistant and previously provided for presentation to the user as part of the dialog session,

based on providing the prompt, preemptively activating a microphone, the microphone being the user interface input device or an additional user interface input device of the one or more client computing devices, and

receiving additional input that is responsive to the prompt, the additional input being based on additional user interface input provided by the user via the microphone; and

using the additional input to influence a value stored in association with the content parameter, wherein the value influences future providing of further content that includes the content parameter.

2. The method of claim 1, further comprising, as part of the additional dialog session:

providing additional dialog session output that is responsive to the additional spoken natural language input and that is also unrelated to the content of the previous dialog session;

wherein providing the prompt occurs following providing the additional dialog session output.

3. The method of claim 2, further comprising:

determining that one or more criteria are satisfied by at least one of: the additional spoken natural language input, and the additional dialog session output;

wherein providing the prompt is further based on determining that the one or more criteria are satisfied by the at least one of: the additional spoken natural language input, and the additional dialog session output.

4. The method of claim 3, wherein the criteria comprises at least one of: the additional dialog session output being of a certain semantic type; and an occurrence in the user prompt of at least one n-gram of a set of criteria n-grams.

5. The method of claim 1, wherein the content is a suggestion to be acted upon by the user in the future and further comprising:

determining that the user acted upon the suggestion after providing the content that includes the content parameter;

wherein providing the prompt is further based on determining that the user acted upon the suggestion.

6. The method of claim 1, further comprising, as part of the additional dialog session:

prior to providing the prompt, providing additional dialog session output;

wherein providing the prompt occurs following providing the additional dialog session output.

7. The method of claim 1, further comprising:

identifying an additional content parameter provided to the user as part of an additional prior dialog session between the user and the automated assistant; and

determining, based on one or more criteria, to provide the prompt based on the content parameter instead of an alternative prompt that is based on the additional content parameter.

8. The method of claim 7, wherein the one or more criteria comprise corresponding temporal proximities of the providing of the content parameter and of the providing of the additional content parameter, optionally, wherein the one or more criteria comprise semantic types assigned to the content parameter and the additional content parameter.

9. The method of claim 1, wherein the content includes a suggestion for a particular physical location and for a particular item consumable at the particular location, and wherein the content parameter identifies the particular item.

10. The method of claim 1, wherein the content includes a suggestion for a particular physical location, and wherein the content parameter identifies a category to which the particular physical location belongs.

11. The method of claim 1, wherein the input and the additional input are both generated via the user interface input device and wherein the content and the feedback prompt are both provided for presentation via the user interface output device, optionally, wherein the user

interface input device includes a microphone of a single device and the user interface output device includes a speaker of the single device.

12. The method of claim 1, wherein:

the input is generated via the user interface input device of a first computing device,

the content is provided for presentation via the user interface output device of the first computing device, and

the prompt is provided for presentation via the additional user interface output device of an additional computing device.

13. A method implemented by one or more processors, comprising:

identifying, from a computer readable medium, a stored content parameter of content previously provided to a user as part of a prior dialog session between a user and an automated assistant implemented by one or more of the processors remote from one or more client computing devices of the user;

as part of an additional dialog session between the user and the automated assistant that is temporally separated from the dialog session and is initiated by the user with additional spoken natural language input that is unrelated to the content of the prior dialog session:

providing a prompt that solicits feedback on the content parameter, wherein providing the prompt is contingent on the user having initiated the additional dialog session,

wherein the prompt is provided for presentation to the user via a user interface output device of the one or more client computing devices, and

wherein the prompt is generated to solicit feedback on the content parameter based on the content parameter being previously provided for presentation to the user as part of the prior dialog session,

based on providing the prompt, preemptively activating a microphone of the one or more client computing devices, and

receiving additional input that is responsive to the prompt, the additional input being based on additional user interface input provided by the user via the microphone; and

using the additional input to influence a value stored in association with the content parameter, wherein the value influences future providing of further content that includes the content parameter.

14. An apparatus configured to perform the method of any preceding claim.

15. A computer program comprising machine readable instructions that when executed by a computing apparatus causes it to perform the method of any of claims 1 to 13.