

METHOD, APPARATUS, DEVICE AND STORAGE MEDIUM FOR MESSAGE INTERACTION

[0001] The present application claims priority to Chinese Patent Application No. 202410658498.4, filed on May 24, 2024 and entitled " METHOD, APPARATUS, DEVICE AND STORAGE MEDIUM FOR MESSAGE INTERACTION ", which is incorporated herein by reference in its entirety.

FIELD

[0002] Example embodiments of the present disclosure generally relate to the field of computers, and in particular, to a method, an apparatus, a device, and a computer-readable storage medium for message interaction.

BACKGROUND

[0003] In recent years, virtual objects such as avatars may help users to handle messages in a timely manner, thereby improving message handling efficiency. For example, the avatar may autonomously generate reply content for a received message, for example, to support generating a reply message when the user is not online, or to promptly handle a large number of received messages.

SUMMARY

[0004] In a first aspect of the present disclosure, a method for message interaction is provided. The method includes: displaying a chat interface with a virtual object, the virtual object corresponding to a target user and being created based on a configuration operation of the target user; receiving a first message for the virtual object in the chat interface; and displaying a second message from the virtual object in the chat interface, the second message including at least one piece of media content, where the at least one piece of media content corresponds to a media work associated with the target user, and/or the at least one piece of media content includes a media material configured by the target user.

[0005] In a second aspect of the present disclosure, an apparatus for message interaction is provided. The apparatus includes: an interface displaying module configured to display a chat interface with a virtual object, the virtual object corresponding to a target user and being created based on a configuration operation of the target user; a message receiving module configured to receive a first message for the virtual object in the chat interface; and a message displaying module configured to display a second message from the virtual object in the chat interface, the second message including at least one piece of media content, where the at least one piece of media content corresponds to a media work associated with the target user, and/or the at least one piece of media content includes a media material configured by the target user.

[0006] In a third aspect of the present disclosure, an electronic device is provided. The device includes at least one processor; and at least one memory, the at least one memory being coupled to the at least one processor and storing instructions for execution by the at least one processor, the instructions, when executed by the at least one processor, causing the device to perform the method of the first aspect.

[0007] In a fourth aspect of the present disclosure, a computer-readable storage medium is provided. The computer-readable storage medium has computer-executable instructions stored thereon, the computer-executable instructions being executable by a processor to implement the method of the first aspect.

[0008] In a fifth aspect of the present disclosure, a computer program product is provided. The computer program product includes computer-executable instructions that, when executed by a processor, implement the method of the first aspect of the present disclosure.

[0009] It should be understood that the summary described in this disclosure is not intended to limit key features or important features of embodiments in the present disclosure, nor is it intended to limit the scope in the present disclosure. Other features in the present disclosure will become readily understood from the following description.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] The foregoing and other features, advantages, and aspects of the various embodiments of the present disclosure will become more apparent with reference to the following detailed description and in conjunction with the drawings. In the drawings, the same or similar reference numerals refer to the same or similar elements, where:

[0011] FIG. 1 illustrates a schematic diagram of an example environment in which the embodiments according to the present disclosure may be implemented;

[0012] FIG. 2A and FIG. 2B illustrate example interfaces according to some embodiments of the present disclosure;

[0013] FIG. 3 illustrates a flowchart of an example process of interaction according to some embodiments of the present disclosure;

[0014] FIG. 4 illustrates a schematic structural block diagram of an example apparatus for interaction according to some embodiments of the present disclosure; and

[0015] FIG. 5 illustrates a block diagram of an electronic device capable of implementing a plurality of embodiments of the present disclosure.

DETAILED DESCRIPTION

[0016] The embodiments in the present disclosure will be described in more detail below with reference to the accompanying drawings. Although certain embodiments in the present disclosure are shown in the drawings, it would be appreciated that the present disclosure can be implemented in various forms and should not be interpreted as limited to the embodiments described in this specification. On the contrary, these embodiments are provided for a more thorough and complete understanding in the present disclosure. It would be appreciated that the accompanying drawings and embodiments in the present disclosure are only for the purpose of illustration and are not intended to limit the scope of protection in the present disclosure.

[0017] It should be noted that the headline of any section/subsection provided in the specification is not limiting. Various embodiments are described throughout the specification and any type of embodiments may be included in any section/subsection. Furthermore, the embodiments described in any section/subsection may be combined in any manner with any other embodiment described in the same section/subsection and/or different sections/subsections.

[0018] In the description of the embodiments in the present disclosure, the term "including" and similar terms would be appreciated as open-ended inclusion, that is, "including but not limited to". The term "based on" would

be appreciated as "at least partially based on". The term "one embodiment" or "the embodiment" would be appreciated as "at least one embodiment". The term "some embodiments" would be appreciated as "at least some embodiments". Other explicit and implicit definitions may also be included below. The terms "first", "second", and the like may refer to different or same objects. Other definitions, either explicit or implicit, may also be included below.

[0019] The embodiments in the present disclosure may relate to user data, acquisition and/or use of data, and the like. These aspects shall comply with the requirements of corresponding laws, regulations and relevant provisions. In the embodiments in the present disclosure, the collection, acquisition, processing, manufacturing, forwarding, use of all data and the like are carried out with user's knowledge and consent. Accordingly, in the implementation of the embodiments in the present disclosure, users should be informed of the type, the scope of use, the use scenario, etc., of the involved data or information in an appropriate manner and provide authorization in accordance with relevant laws and regulations. The specific ways of being informed and providing authorization may vary according to actual circumstances and application scenarios, and the scope of this disclosure is not limited in this regard.

[0020] In the solutions and embodiments in this disclosure, if personal information processing is involved, it will be carried out based on legitimate grounds (such as obtaining consent from the data subject, or as required to fulfill a contract, etc.) and will be performed only within a specified or agreed scope. If users decline the processing of personal information beyond what is essential for basic functionalities, their utilization of these basic features remains uninterrupted.

[0021] As mentioned above, virtual objects such as avatars may help users handle messages in a timely manner and improve message handling efficiency. However, traditional virtual objects usually only use modalities such as text to reply to messages, which affects the efficiency of message interaction.

[0022] An embodiment of the present disclosure proposes an interaction solution. According to the solution, a chat interface with a virtual object is displayed, the virtual object corresponding to a target user and being created based on a configuration operation of the target user; a first message for the virtual object is received in the chat interface; and a second message from the virtual object is displayed in the chat interface, the second message including at least one piece of media content, where the at least one piece of media content corresponds to a media work associated with the target user, and/or the at least one piece of media content includes a media material configured by the target user.

[0023] In this way, the embodiments of the present disclosure are capable of generating reply messages in a chat by using the media content associated with the target user, thereby increasing the richness of messages.

[0024] Various example implementations of the solution are described in detail below in further conjunction with the drawings.

EXAMPLE ENVIRONMENT

[0025] FIG. 1 illustrates a schematic diagram of an example environment 100 in which the embodiments of the present disclosure may be implemented. As shown in FIG. 1, the example environment 100 may include an electronic device 110.

[0026] In the example environment 100, the electronic device 110 may run an application 120 that supports interface interaction. The application 120 may be any appropriate type of application for interface interaction,

examples of which may include, but are not limited to, an instant messaging application, a social application, an image application, or other appropriate applications. A user 140 may interact with the application 120 via the electronic device 110 and/or its attached device.

[0027] In the environment 100 of FIG. 1, if the application 120 is in an active state, the electronic device 110 may present, by the application 120, an interface 150 for supporting interface interaction.

[0028] In some embodiments, the electronic device 110 communicates with a server 130 to implement the provision of services for the application 120. The electronic device 110 may be any type of mobile terminal, fixed terminal, or portable terminal, including a mobile phone, a desktop computer, a laptop computer, a notebook computer, a netbook computer, a tablet computer, a media computer, a multimedia tablet, a palmtop computer, a portable game terminal, a VR/AR device, a personal communication system (PCS) device, a personal navigation device, a personal digital assistant (PDA), an audio/video player, a digital camera/video camera, a positioning device, a television receiver, a radio broadcast receiver, an e-book device, a game device, or any combination thereof, including the accessories and peripherals of these devices or any combination thereof. In some embodiments, the electronic device 110 may also support any type of user-specific interface (such as "wearable" circuit, etc.).

[0029] The server 130 may be an independent physical server, a server cluster or distributed system composed of a plurality of physical servers, or cloud servers that provides cloud services, cloud databases, cloud computing, cloud functions, cloud storage, network services, cloud communications, middleware services, domain name services, security services, content delivery networks, and basic cloud computing services such as big data and artificial intelligence platforms. The server 130 may include, for example, a computing system/server, such as a mainframe, an edge computing node, a computing device in a cloud environment, and so on. The server 130 may provide background services for the application 120 supporting virtual scenes in the electronic device 110.

[0030] A communication connection may be established between the server 130 and the electronic device 110. The communication connection may be established by wired or wireless manners. The communication connection may include, but is not limited to, a Bluetooth connection, a mobile network connection, a universal serial bus (USB) connection, a wireless fidelity (WiFi) connection, etc., and the embodiments of the present disclosure are not limited in this regard. In the embodiments of the present disclosure, the server 130 and the electronic device 110 may implement signaling interaction through the communication connection therebetween.

[0031] It would be appreciated that the structure and function of each element in the environment 100 are described for illustrative purposes only, without suggesting any limitation on the scope of the present disclosure.

[0032] Some example embodiments of the present disclosure are described below with continued reference to the drawings.

EXAMPLE INTERACTION

[0033] FIG. 2A and FIG. 2B illustrate example interfaces 200A to 200B according to some embodiments of the present disclosure. The interfaces 200A to 200B may be provided by, for example, the electronic device 110 shown in FIG. 1.

[0034] As shown in FIG. 2A, the interface 200A may be a chat interface associated with a virtual object. Such a virtual object may correspond to a target user (for example, user X) and may be created based on a configuration operation of the target user.

[0035] In some scenarios, such a virtual object may also be referred to as an avatar or a digital avatar, which may be driven based on, for example, a machine learning model to have the ability to interact with other users, such as text-based, voice-based, or video-based interaction. The present disclosure is not intended to limit the specific construction method of the virtual object.

[0036] As shown in FIG. 2A, the chat corresponding to the interface 200A may be a private chat interface between the current user and the virtual object, or may be a group chat interface in which participants include the current user and the virtual object.

[0037] In some embodiments, the electronic device 110 may receive a first message 210 sent by the user via an input control 205. It would be appreciated that the first message may have any appropriate form, examples of which may include, but are not limited to, a text message, an emoji message, a voice message, a video message, a picture message, or a combination thereof.

[0038] In some embodiments, the first message 210 may include, for example, a reference portion for the virtual object or the target user to indicate that the first message 210 is for the virtual object. For example, the reference portion may include such as a reference identifier (for example, @) and the name of the virtual object. In some other embodiments, the reference portion may include such as a reference identifier (for example, @) and the name of the target user. In the case that the reference portion includes the target user, the virtual object may reply to the message according to a preset condition, where the preset condition may include that the target user does not reply within a preset time.

[0039] Further, the electronic device 110 may receive and display a second message 215 from the virtual object. Such a second message 215 may be generated by, for example, a target model corresponding to the virtual object.

[0040] In some embodiments, such a second message 215 may include, for example, text content 220. In addition, the second message 215 may further include at least one piece of media content, such as media content 225 and media content 230.

[0041] In some embodiments, the media content 225 may correspond to, for example, a media work associated with the target user. For example, such a media work may include a media work posted by the target user, which may be displayed on a personal page of the target user. In addition, such a media work may further include, for example, a media work favorited by the target user, or a media work that mentions the target user, etc.

[0042] It would be appreciated that the use of such media works is performed with the knowledge and authorization of the user.

[0043] In some embodiments, the electronic device 110 may receive, for example, a trigger operation for the media content 225 and may present an interface 200B as shown in FIG. 2B accordingly. The interface 200B may be, for example, a playback interface of a media work 235 corresponding to the media content 225.

[0044] Alternatively, the electronic device 110 may also play the media content 225 in the interface 200A based on the trigger operation on the media content 225, for example.

[0045] In this way, the embodiments of the present disclosure can support the virtual object to generate the reply message by using the media work associated with the target user, thereby enriching the types of reply messages and improving the efficiency of message interaction.

[0046] Continuing to refer to FIG. 2A, the media content 230 may further include, for example, a media material configured by the target user. For example, the target user may configure a media material library which is

available for the virtual entity when generating reply messages. Such a media material library may include various appropriate types of media content, such as video content, picture content, audio content, etc.

[0047] In this way, the embodiments of the present disclosure can support the virtual object to generate the reply message by using the media material configured by the target user, thereby enriching the types of reply messages and improving the efficiency of message interaction.

[0048] It would be appreciated that although the second message 215 shown in FIG. 2A includes the text content 220 and multiple pieces of media content, the second message generated by the virtual object may include only one or more pieces of media content, for example.

[0049] The specific generation process of the second message is further described below. As mentioned above, the second message 215 may be generated by, for example, the target model corresponding to the virtual object. Such a target model may include any appropriate machine learning model such as a language model.

[0050] In some embodiments, the electronic device 110 may provide the received first message 210 to the target model. Further, the target model may generate the second message 215 based on the received first message 210 and reference information.

[0051] In some embodiments, such reference information may represent or describe a set of media works associated with the target user. For example, during the process of constructing or configuring the virtual object, the target user may authorize the target model to obtain description information of the associated media work. Such description information may include, for example, an identification of the media work and a content description about the media work.

[0052] In this way, the target model can determine, according to the description information about the media work, whether it is suitable to utilize a specific media work to reply to such a first message 210. When it is determined that the specific media work is suitable for replying to the first message 210, the target model can output an identification of the specific media work for the electronic device 110 to display the media content 225 (that is, the media work) corresponding to the identification in the interface 200A.

[0053] In some embodiments, the reference information may further represent or describe a media material set configured by the target user, for example. Such a media material set may include one or more media materials configured by the target user. For example, the target user may provide the target model with identifications and corresponding description information for multiple pieces of media material. In some embodiments, such description information may be input by the target user, or may be automatically generated based on the media material using an appropriate model.

[0054] In this way, the target model can determine, according to the description information about the media material set, whether it is suitable to utilize the specific media work to reply to the first message 210. When it is determined that the specific media material is suitable for replying to the first message 210, the target model can output an identification of the specific media material, for use by the electronic device 110 to display the media content 230 (that is, the media material) corresponding to the identification in the interface 200A.

[0055] In this way, the embodiments of the present disclosure can support the virtual object in considering the associated media content when generating the reply message, and can generate the response with the appropriate media content, thereby increasing the richness of the message.

[0056] In some embodiments, in order to facilitate the management of the message reply process of the virtual

object, the embodiments of the present disclosure may, for example, further support the virtual object in replying to the message associated with a target theme by using only media content.

[0057] As an example, when the first message 210 matches the target theme, the target model corresponding to the virtual object is triggered to generate the second message 215 based on the reference information. On the contrary, the target model may be configured to reply to the message that does not match the target theme by using only text content.

[0058] In some embodiments, such a target theme may be a preset theme. For example, in a customer service scenario, such a target theme may be, for example, a preset theme related to customer service inquiries, such as after-sales inquiries. Alternatively or additionally, such a target theme may further include, for example, a theme configured by the target user. For example, the target user may configure a theme of commodity inquiries, so that the target model may use the media content to reply to the message related to the product inquiry theme.

[0059] Based on the process described above, the embodiments of the present disclosure are capable of generating the reply message in the chat by using the media content (for example, the media work or the configured media material) associated with the target user, thereby increasing the richness of the message.

EXAMPLE PROCESS

[0060] FIG. 3 is a flowchart of an example process 300 of message interaction according to some embodiments of the present disclosure. The process 300 may be implemented at the electronic device 110. The process 300 is described below with reference to FIG. 1.

[0061] As shown in FIG. 3, at a block 310, the electronic device 110 displays a chat interface with a virtual object, the virtual object corresponding to a target user and being created based on a configuration operation of the target user.

[0062] At a block 320, the electronic device 110 receives a first message for the virtual object in the chat interface.

[0063] At a block 330, the electronic device 110 displays a second message from the virtual object in the chat interface, the second message including at least one piece of media content, where the at least one piece of media content corresponds to a media work associated with the target user, and/or the at least one piece of media content includes a media material configured by the target user.

[0064] In some embodiments, the process 300 further includes: providing the first message to a target model corresponding to the virtual object; and obtaining the second message generated by the target model based on the first message and reference information, the reference information representing a set of media works associated with the target user and/or a media material set configured by the target user.

[0065] In some embodiments, the process 300 further includes: triggering, in response to the first message matching a target theme, the model to generate the second message based on the first message and the reference information.

[0066] In some embodiments, the target theme includes a preset first theme and/or a second theme configured by the target user.

[0067] In some embodiments, the at least one piece of media content corresponds to the media work, and the method of the process 300 further includes: displaying a playback interface for the media work in response to a preset operation for the at least one piece of media content.

[0068] In some embodiments, the chat interface includes a group chat interface associated with a plurality of

chat participants, and the first message includes a reference portion for the virtual object or the target user.

[0069] In some embodiments, the at least one piece of media content includes at least one of the following types of media content: picture content, video content, audio content.

[0070] In some embodiments, the media work includes a media work posted by the target user.

EXAMPLE APPARATUS AND DEVICE

[0071] An embodiment of the present disclosure further provides a corresponding apparatus for implementing the above method or process. FIG. 4 is a schematic structural block diagram of an example apparatus 400 for message interaction according to some embodiments of the present disclosure. The apparatus 400 may be implemented as or included in the electronic device 110. Each module/component in the apparatus 400 may be implemented by hardware, software, firmware, or any combination thereof.

[0072] As shown in FIG. 4, the apparatus 400 includes an interface displaying module 410 configured to display a chat interface with a virtual object, the virtual object corresponding to a target user and being created based on a configuration operation of the target user; a message receiving module 420 configured to receive a first message for the virtual object in the chat interface; and a message displaying module 430 configured to display a second message from the virtual object in the chat interface, the second message including at least one piece of media content, where the at least one piece of media content corresponds to a media work associated with the target user, and/or the at least one piece of media content includes a media material configured by the target user.

[0073] In some embodiments, the apparatus 400 further includes a message providing module configured to provide the first message to a target model corresponding to the virtual object; and a message obtaining module configured to obtain the second message generated by the target model based on the first message and reference information, the reference information representing a set of media works associated with the target user and/or a media material set configured by the target user.

[0074] In some embodiments, the apparatus 400 further includes a message generating module configured to: in response to the first message matching a target theme, trigger the target model to generate the second message based on the first message and the reference information.

[0075] In some embodiments, the target theme includes a preset first theme and/or a second theme configured by the target user.

[0076] In some embodiments, the at least one piece of media content corresponds to the media work, and the process 400 further includes a displaying module configured to: display a playback interface for the media work in response to a preset operation for the at least one piece of media content.

[0077] In some embodiments, the chat interface includes a group chat interface associated with a plurality of chat participants, and the first message includes a reference portion for the virtual object or the target user.

[0078] In some embodiments, the at least one piece of media content includes at least one of the following types of media content: picture content, video content, audio content.

[0079] In some embodiments, the media work includes a media work posted by the target user.

[0080] FIG. 5 illustrates a block diagram of an electronic device 500 in which one or more embodiments in the present disclosure may be implemented. It would be appreciated that the electronic device 500 illustrated in FIG. 5 is merely exemplary and should not constitute any limitation on the functionality and scope of the embodiments described herein. The electronic device 500 shown in FIG. 5 may be configured to implement the electronic

device 110 in FIG. 1.

[0081] As shown in FIG. 5, the electronic device 500 is in the form of a general-purpose electronic device. Components of the electronic device 500 may include, but are not limited to, one or more processors or processing units 510, a memory 520, a storage device 530, one or more communication units 540, one or more input devices 550, and one or more output devices 560. The processing unit 510 may be an actual or virtual processor capable of performing various processes according to a program stored in the memory 520. In a multiprocessor system, a plurality of processing units execute computer-executable instructions in parallel to improve the parallel processing capabilities of electronic device 500.

[0082] The electronic device 500 typically includes a variety of computer storage media. Such media may be any available media that are accessible to the electronic device 500, including, but not limited to, volatile and non-volatile media, removable and non-removable media. The memory 520 may be a volatile memory (e.g., a register, cache, random access memory (RAM)), non-volatile memory (e.g., read-only memory (ROM), electrically erasable programmable read-only memory (EEPROM), flash memory), or some combination thereof. The storage device 530 may be a removable or non-removable medium and may include a machine-readable medium, such as a flash drive, magnetic disk, or any other medium that can be used to store information and/or data and that can be accessed within the electronic device 500.

[0083] The electronic device 500 may further include an additional removable/non-removable, volatile/non-volatile storage medium. Although not shown in FIG. 5, a disk drive for reading from or writing to a removable, non-volatile magnetic disk (e.g., a “floppy disk”) or an optical disk drive for reading from or writing to a removable, non-volatile optical disk may be provided. In these cases, each drive may be connected to a bus (not shown) by one or more data media interfaces. The memory 520 may include a computer program product 525 having one or more program modules configured to execute various methods or actions of the various embodiments in the present disclosure.

[0084] The communication unit 540 is configured to communicate with other electronic devices through a communication medium. Additionally, the functionality of components of the electronic device 500 may be implemented by a single computing cluster or multiple computing machines capable of communicating through a communication connection. Thus, the electronic device 500 may operate in a networked environment using a logical connection with one or more other servers, network personal computers (PCs), or another network node.

[0085] The input device 550 may be one or more input devices such as a mouse, a keyboard, a trackball, or the like. The output device 560 may be one or more output devices, such as a display, a speaker, a printer, or the like. The electronic device 500 may also communicate with one or more external devices (not shown) through the communication unit 540 as needed. The external device, such as a storage device, a display device, etc., communicates with one or more devices that enable users to interact with the electronic device 500, or communicates with any device (e.g., a network card, a modem, etc.) that enables the electronic device 500 to communicate with one or more other electronic devices. Such communication may be performed via an input/output (I/O) interface (not shown).

[0086] According to example implementations in the present disclosure, a computer-readable storage medium having computer-executable instructions stored thereon is provided. The computer-executable instructions are executed by a processor to implement the method described above. According to example implementations in

the present disclosure, a computer program product is further provided. The computer program product is tangibly stored on a non-transitory computer-readable medium and includes computer-executable instructions. The computer-executable instructions are executed by a processor to implement the method described above.

[0087] Various aspects in the present disclosure are described herein with reference to flowcharts and/or block diagrams of methods, apparatuses, devices, and computer program products implemented according to the present disclosure. It would be appreciated that each block of the flowchart and/or block diagram, and combinations of blocks in the flowcharts and/or block diagrams, may be implemented by computer readable program instructions.

[0088] These computer-readable program instructions may be provided to a processing unit of a general-purpose computer, special computer, or other programmable data processing apparatus to produce a machine that generates an apparatus to implement the functions/acts specified in one or more blocks in the flowchart and/or the block diagram when these instructions are executed through the processing units of the computer or other programmable data processing devices. These computer-readable program instructions may also be stored in a computer-readable storage medium. These instructions cause the computer, programmable data processing apparatus, and/or other devices to work in a specific way. Therefore, the computer-readable medium storing instructions includes an article of manufacture including instructions to implement aspects of the functions/acts specified in one or more blocks in the flowchart and/or block diagram(s).

[0089] The computer-readable program instructions may be loaded onto a computer, a programmable data processing apparatus, or a further device, such that a series of operational steps can be performed on the computer, programmable data processing apparatus, or the further device to produce a computer-implemented process. As such, the instructions executed on the computer, programmable data processing apparatus, or the further device implement the functions/acts specified in the one or more blocks in the flowchart and/or block diagram(s).

[0090] The flowchart and block diagrams in the drawings show the possible architecture, functions and operations of the system, the method, and the computer program product implemented according to various implementations in the present disclosure. In this regard, each block in the flowchart or block diagram may represent a part of a module, a program segment or instructions, which contains one or more executable instructions for implementing the specified logic function(s). In some alternative implementations, the functions marked in the blocks may also occur in a different order from those marked in the drawings. For example, two consecutive blocks may be executed in parallel, and sometimes can also be executed in a reverse order, depending on the function involved. It should also be noted that each block in the block diagram and/or the flowchart, and combinations of blocks in the block diagram and/or the flowchart, may be implemented by a dedicated hardware-based system that performs the specified functions or acts, or by a combination of a dedicated hardware and computer instructions.

[0091] Various implementations in the present disclosure have been described above. The above description is exemplary, not exhaustive, and the present application is not limited to the disclosed implementations. Without departing from the scope and spirit of the described implementations, many modifications and changes are obvious to those skilled in the art. The terminology used herein has been chosen to best explain the principles of the respective implementations, the practical applications or improvements to the technology in the marketplace, or to enable those skilled in the art to understand the implementations disclosed herein.

CLAIMS

1. A method for message interaction, comprising:
displaying a chat interface with a virtual object, the virtual object corresponding to a target user and being created based on a configuration operation of the target user;
receiving a first message for the virtual object in the chat interface; and
displaying a second message from the virtual object in the chat interface, the second message comprising at least one piece of media content,
wherein the at least one piece of media content corresponds to a media work associated with the target user, and/or the at least one piece of media content comprises a media material configured by the target user.
2. The method of claim 1, further comprising:
providing the first message to a target model corresponding to the virtual object; and
obtaining the second message generated by the target model based on the first message and reference information, the reference information representing a set of media works associated with the target user and/or a media material set configured by the target user.
3. The method of claim 2, further comprising:
triggering, in response to the first message matching a target theme, the model to generate the second message based on the first message and the reference information.
4. The method of claim 3, wherein the target theme comprises a preset first theme and/or a second theme configured by the target user.
5. The method of claim 1, wherein the at least one piece of media content corresponds to the media work, and the method further comprises:
displaying a playback interface for the media work in response to a preset operation for the at least one piece of media content.
6. The method of claim 1, wherein the chat interface comprises a group chat interface associated with a plurality of chat participants, and the first message comprises a reference portion for the virtual object or the target user.
7. The method of claim 1, wherein the at least one piece of media content comprises at least one of the following types of media content: picture content, video content, audio content.
8. The method of claim 1, wherein the media work comprises a media work posted by the target user.
9. An apparatus for message interaction, comprising:

an interface displaying module configured to display a chat interface with a virtual object, the virtual object corresponding to a target user and being created based on a configuration operation of the target user;

a message receiving module configured to receive a first message for the virtual object in the chat interface;
and

a message displaying module configured to display a second message from the virtual object in the chat interface, the second message comprising at least one piece of media content, wherein the at least one piece of media content corresponds to a media work associated with the target user, and/or the at least one piece of media content comprises a media material configured by the target user.

10. An electronic device, comprising:

at least one processor; and

at least one memory being coupled to the at least one processor and storing instructions for execution by the at least one processor, the instructions, when executed by the at least one processor, causing the electronic device to perform the method of any of claims 1 to 8.

11. A computer-readable storage medium having computer-executable instructions stored thereon, the computer-executable instructions being executable by a processor to implement the method of any of claims 1 to 8.

12. A computer program product comprising computer-executable instructions that, when executed by a processor, implement the method of any of claims 1 to 8.