Title: METHOD OF RECORDING, EDITING AND SHARING AN AGGLOMERATION OF VIDEOS

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(57) Abstract: The present invention is a method of recording, editing and sharing videos comprising recording and storing a plurality of individual videos using a set of slots representing an embodiment of a collage of videos displayed in the camera view on the screen of an electronic device, resulting in a plurality of corresponding recorded videos; editing said plurality of recorded videos on an individual basis or on a collective basis and creating a single resultant video using said plurality of recorded videos. The present invention also implements collaborative video recording wherein video recording of a plurality of individual videos using said set of slots is performed by a primary user and at least one secondary user and corresponding recorded videos (of the collaboration) are used to make a resultant video (of the collaboration) which is subsequently edited and shared.
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METHOD OF RECORDING, EDITING AND SHARING AN AGGLOMERATION OF VIDEOS

BACKGROUND

Technical field

[0001] The present invention relates to a method of video recording, editing and sharing and in particular to method of narrative de-construction of videos to drive the meaning of the story or message the video is intended to convey.

Description of the related art

[0002] The main intention of any video is to tell a story. Videos that a viewer sees are usually created by recording and editing a montage of separately shot videos that are constructed into one video that gives sense of a whole essence of a story. Traditionally, a video is put together by recording, selecting, editing, and piecing together separate sections of film to form a continuous whole and a sequence of videos resulting from this is performed to convey a structured story and people then deconstruct it in their minds to drive the meaning of the whole story. This creates limitations with regard to the extent a story can be conveyed through video as deconstruction of the montage in the minds of a viewer is restricted within the bounds of what has been shown in the montage. Hence, what is required is a method of presenting the whole story that the video is intended to convey in such a way so that a viewer can reconstruct the story in his mind connecting pieces and drive the intended meaning of the story faster as opposed to deconstructing a montage of videos to drive the meaning of the whole story. This will lead to a more dynamic, fun and easy approach of viewing videos, adding value to the video in terms of conveying messages as well broadening the scope for imagination pertaining to various aspects of the same story.
SUMMARY OF THE INVENTION

[0001] The present invention implements recording individual videos in one go and at the same time stringing together said individual videos wherein the viewer can reconstruct the story connecting pieces and drive the intended meaning of the story in his/her mind. Hence, it provides a broader scope for imagination pertaining to various aspects of the same story that is being conveyed through video.

[0002] The present invention relates to an interactive method of video interaction and in particular to video recordings wherein creation of a resultant video is achieved by recording and storing a plurality of individual videos using a set of slots representing an embodiment of a collage of videos displayed in the camera view on the screen of an electronic device, resulting in a plurality of corresponding recorded videos wherein said resultant video is a product of said recorded videos playing in a defined sequence. The number of said individual videos to be recorded is defined by a primary user. Also, the maximum time duration of each of said individual videos to be recorded is defined by the primary user.

[0003] The present invention further enables editing said plurality of recorded videos on an individual basis or on a collective basis. The present invention implements a set of assigned slots that comprises individual slots displayed on the camera recording screen on the display of an electronic device wherein one of the individual slots can be selected by a primary user and/or at least one secondary user(s), and upon completion of recording, related recorded video is stored in the memory of the electronic device that corresponds to said slot and said slot is labeled to indicate that it has been used and is occupied. After completion of recording of one video, the videos...
recorded thereafter are stored in accordance to the slots of said set of slots selected by said primary user or said at least one secondary user.

[0005] The editing of said recorded videos and the resultant video is performed by a primary user and/or a plurality of secondary users wherein video editing permission for secondary users is defined by the primary user. The primary user, can either perform editing by himself or enable a set of secondary users to edit the videos by sharing the videos over a network. Edited videos are subsequently shared over a network to enable a defined set of users to view the video.

[0006] The present invention also implements collaborative video recording wherein plurality of individual videos using said set of slots is performed by a primary user and at least one secondary user wherein said individual videos may be simultaneously recorded by the primary user and said at least one secondary user(s) and the number of said individual videos is defined by the primary user. The slots to be used by said at least one secondary user(s) is either defined by the primary user or assigned automatically or chosen by said at least one secondary user(s) themselves wherein a secondary user has the permission for doing so.

[0007] Upon completion of recording said number of videos, a resultant video is created using said number of videos that were recorded by the primary user and said at least one secondary user(s) in the primary user's device by defining a play back sequence of said recorded videos.

[0008] The resultant video can be shared by the primary user over a network in order to enable a defined set of secondary users to view said resultant video. The resultant video can also be shared by the primary user over a network to enable a set of secondary users to edit said resultant video wherein said set of secondary users is defined by the primary user.
Upon completion of editing by said set of secondary users, at least one edited version(s) of said resultant video(s) is/are shared by said set of secondary users over a network to enable a set of viewers to view said resultant video wherein the primary user defines said set of viewers.

The present invention also implements security and user authentication that protects against unauthorized access, viewing, editing and sharing of videos. This is achieved by representing a video from the collage as a thumbnail wherein said thumbnail is de-constructed into a plurality of fragments and arranged in an initial jumbled order. A resultant video is protected from unauthorized access by defining a particular key order in which said fragments need to be re-arranged. Anyone wishing to access said video needs to re-arrange said fragments to the order as that of said key order.

BRIEF DESCRIPTION OF DRAWINGS

FIG. 1 illustrates a camera view wherein option for selection of collage is provided to the user, displayed on the screen of an electronic device.

FIG. 2 illustrates a set of slots displayed on the screen of an electronic device wherein a user picks a slot to use for recording.

FIG. 3a illustrates editing of a recorded video and the associated GUI that enables editing.

FIG. 3b illustrates editing of recorded videos wherein recorded videos are tagged and named.

FIG. 3c illustrates a GUI that is used for functions like self destruction, share, add to favorites, lock, send, delete.
FIG. 4 illustrates a collage of recorded videos wherein recorded videos have been used to create a resultant video (referred to as "STRING" in the diagram) and can be shared using GUI.

FIG. 5 illustrates a resultant video displayed on a screen of an electronic device that can be played using the GUI.

FIG. 6 illustrates a collage of videos that occupies two-third of the display screen of the electronic device.

FIG. 7 illustrates a collage of videos that occupies half of the display screen of the electronic device.

FIG. 8 illustrates a collage of videos that occupies full-screen of the display screen of the electronic device.

FIG. 9 illustrates recorded videos in a collage by a single user.

FIG. 10 illustrates recorded videos in a collage by multiple user wherein videos recorded by users 1,2,3,4,5,6,7,8,9 are represented in slots l,2,3,4,5,6,7,8,9 respectively.

FIG. 11 illustrates a resultant video from collaboration displayed on a screen of an electronic device that can be played using the GUI.

FIG. 12 illustrates editing of recorded videos by a secondary user using a GUI.

FIG. 13 illustrates the edited videos in figure 12 can be re-shared by secondary user using GUI.

FIG. 14 (a) illustrates the resultant video as a thumbnail.

FIG. 14 (b) illustrates thumbnail of Figure 14(a) being deconstructed into plurality of fragments and arranged in an initial jumbled order.

FIG. 14 (c) illustrates rearrangement of fragments of thumbnail of fig 14(a) from initial jumbled order to the key order.
FIG. 15 illustrates the thumbnail of figure 14(a) that has been rearranged to its key order and can be played using GUI.

FIG. 16 illustrates a flow diagram that depicts recording, editing and sharing by a single user.

FIG. 17 illustrates a flow diagram that depicts an example of collaborative recording, editing and sharing.

FIG. 18 illustrates a flow diagram that explains the security measure implemented for authentication of a viewer of the video.

DETAILED DESCRIPTION

The following detailed description contains specific details that are set forth to provide a comprehensive understanding of the present invention. Although the following detailed description contains many specifics for the purposes of illustration, anyone of ordinary skill in the art will appreciate that many variations and alterations to the following details are within the scope of the invention. Accordingly, the following embodiments of the invention are set forth without any loss of generality to, and without imposing limitations upon, the claimed invention.

In one implementation, one or more of the techniques described herein can be implemented as features within any type of program or service that provides video recording and/or editing and/or sharing of any type of video.

The present invention can be implemented on any electronic device that has hardware components that support video recording and/or editing and/or sharing such as (but not limited to) - digital and analog video cameras, computers (desktop, laptop, tablets) with web-camera, mobile phones with cameras, personal multimedia devices with camera, etc.
The various hardware platforms on which the applications that implement the present invention run may use one or more processors with different instruction-sets, architectures, clock-speeds, etc. and memory that may include high speed random access memory and may include non-volatile memory such as one or more magnetic disk storage devices, flash memory devices and other kinds of solid state memory devices. The means of control and navigation on such devices may include (but not limited to) touchscreens, touchpads, mouse, etc.

Display means used by these hardware platforms may use LCD (liquid crystal display) technology, LED (light Emitting Diode) technology, CRT (Cathode ray tube) technology, or LPD (light emitting polymer) technology or any other display technologies. Various realizations of graphics display circuitry that implement a Graphics Processing Unit (GPU) are used to achieve video interface between user and these devices.

Connectivity of these devices with networks such as the internet, an intranet and/or wireless network such as cellular telephone network, a wired or wireless local area network (LAN) and/or metropolitan area network (MAN) and/or WAN (wide area network) and other wireless communication is achieved by use of a plurality of communication standards, protocols and technologies like Global System for mobile communication (GSM), Enhanced Data GSM Environment (EDGE), wideband code division of multiple access (W-CDMA), code division of multiple access (CDMA), time division multiple access (TDMA), Bluetooth, Wireless Fidelity (Wi-Fi) and/or any other suitable communication protocol, including communication protocols not yet developed as of the filing date of this document.

Audio interface between a user and these devices is achieved by use of various realizations of audio circuitry. The present invention maybe implemented on applications
that run on a single or variety of operating system platforms including but not limited to OS X, WINDOWS, UNIX, IOS, ANDROID, SYMBIAN, LINUX, or embedded operating systems such as VxWorks.

[0040] The present invention maybe implemented to work with various video formats including but not limited to MPEG4, AVI, FLV, WMV, DIVX, MKV and VOB.

[0041] The present invention may also be implemented to work with various web browsers including but not limited to Internet Explorer, Mozilla Firefox, Safari and Opera that access and handle various types of web pages constructed with various mark up languages such as HTML, HTML-5, XHTML, XML, etc. and the associated CSS (cascading style sheet) files and javascript files.

[0042] The present invention implements recording and storing a plurality of individual videos 100 using a set of slots 101 representing an embodiment of a collage of videos 102 displayed in the camera view 103 on the screen 104 of an electronic device 105, resulting in a plurality of corresponding recorded videos 106 wherein a resultant video 107 is a product of said recorded videos 106 playing in a defined sequence. Recording and storing of videos may be done such as those described in (but not limited to) US patent with Application number: 08/091,128 ("Digital video signal recording and reproducing method and apparatus thereof, filed on July 14, 1993”), US patent with Application number: 11/835,816 ("Digital video recorder having hierarchical memories and method for implementing hierarchical memories", filed on August 8, 2007) and US application number: 10/704,423 ("Adaptive digital video recorder and method of controlling the same", filed on November 7, 2003). Slots 101 are graphically represented as portions equally dividing the region wherein the camera view 103 is displayed on the screen 104 of an electronic device 105. These slots 101 are tied to the memory of the electronic device 105 in various ways.
depending upon the hardware platform and programmed to correspond as individual entities within the memory of the electronic device 105. As mentioned above, these slots 101 are graphically represented on the screen 104 of an electronic device and can be selected by a user to be used for recording and storing (subsequently editing and sharing) videos by using the means of control and navigation 108 present in the electronic device 105. The above mentioned collage 102 maybe represented as a collection of slots 101 represented as different embodiments such as mosaic, grid, pile, stack, etc. [0043] A camera view 103 on the screen 104 of an electronic device 105 is the view that is presented to a user on the display screen 104 of an electronic device 105 upon selecting the option/feature to record a video. The above mentioned defined sequence may be defined by a user or automatically selected by implementing an algorithm. The order of the sequence may be serial, alternating, first-to-last, last-to-first, random, looping, etc. The spatial bounds within which said collage is displayed is typically two-thirds of the screen size 109 of the electronic device 105. However other sizes such as (but not limited to) half screen 110 and full screen 111 may also be realized. [0044] The number of said individual videos 100 to be recorded is defined by a primary user. Also, the maximum time duration of each of said individual videos to be recorded is defined by the primary user. The primary user is a user who initiates the whole recoding process in his electronic device and all permissions for recording, editing and sharing videos are enabled/allowed for him. Editing involves performing modifications on videos such as (but not limited to) adding/implementing filters, effects (audio effects, visual/video effects, other effects), synchronizations, defining playing sequence of recorded videos to sting them, resolution settings, design overlay, over writing a slot, etc. Editing is performed by using a graphical user interface (GUI) 112. The graphical user interface 112 is also used to enable a
user to perform activities like (but not limited to) sharing, adding to favorites, rating the video, setting permissions, etc. A secondary user is a user for whom all permissions of recording, access, editing and sharing are defined by the primary user. The secondary user conventionally uses an electronic device other than that being used by the primary user.

5 [0045] The present invention further enables editing said plurality of recorded videos on an individual basis or on a collective basis. The present invention implements a set of assigned slots 101 that comprises individual slots displayed on the camera recording view 113 on the display of an electronic device 105 wherein one of the individual slots is selected by a primary user or at least one secondary user(s), and upon completion of recording, related recorded video is stored in the memory of the electronic device 105 that corresponds to said slot and said slot is labeled 114 to indicate that it has been used and is occupied. After completion of recording of one video, the above mentioned step is repeated to record a subsequent number of videos.

[0046] The editing of said recorded videos 106 and the resultant video 107 is performed by a primary user and/or a plurality of secondary users wherein video editing permission for secondary users is defined by the primary user. The primary user, can either perform editing by himself or enable a set of secondary users to edit the videos by sharing the videos over a network. Edited videos are subsequently shared over a network to enable a defined set of users to view the video.

20 [0047] The present invention also implements collaborative video recording 115 wherein plurality of individual videos 100 using said set of slots 101 is performed by a primary user and at least one secondary user wherein said individual videos 100 may be simultaneously recorded by the primary user and said at least one secondary user(s) and the number of said individual videos 100 is defined by the primary user. The slots 101 to be used by said at
least one secondary user(s) is either defined by the primary user or assigned automatically or chosen by said at least one secondary user(s) themselves wherein a secondary user can select the slot 101 for recording.

[0048] Upon completion of recording said number of videos, a resultant video (of the collaboration) 116 is created using said number of videos that were recorded by the primary user and said at least one secondary user(s) in the primary user’s device by defining a playback sequence of said recorded videos (from the collaboration) 117.

[0049] The resultant video 116 is shared by the primary user over a network in order to enable a defined set of secondary users to view said resultant video 116. The resultant video 116 is shared by the primary user over a network to enable a set of secondary users to edit said resultant video 116 wherein said set of secondary users is defined by the primary user.

[0050] Upon completion of editing by said set of secondary users, at least one edited version(s) of said resultant video(s) is/are shared by said set of secondary users over a network to enable a set of viewers to view said resultant video 116 wherein the primary user defines said set of viewers.

[0051] The present invention also implements security and user authentication that protects against unauthorized access, viewing, editing and sharing of videos. This is achieved by representing a video selected from the collage as a thumbnail 118 wherein said thumbnail is de-constructed into a plurality of fragments 119 and arranged in an initial jumbled order 120. A resultant video is protected from unauthorized access by defining a particular key order 121 in which said fragments 119 need to be re-arranged. For user authentication, an entity wishing to access said video needs to re-arrange said fragments 119 from said initial jumbled order 120 to the order as that of said key order 121.
CLAIMS

What is claimed is:

1. An interactive method of video interaction, the method comprising:
   based on an input from a primary user or at least one secondary user, recording and storing a plurality of individual videos, wherein a set of slots representing an embodiment of a collage of videos displayed in a camera view is used for receiving said input on the screen of an electronic device, resulting in a plurality of corresponding recorded videos;
   creating a single resultant video using said plurality of recorded videos; and
   based on an input received from said primary users and/or said at least one secondary user, editing said plurality of recorded videos and/or said resultant video on an individual basis or on a collective basis.

2. The method in claim 1, wherein, upon completion of recording of an individual video, an individual slot of said set of slots selected by said primary user or said at least one secondary user(s), causes said individual video recorded to be stored in the memory of said electronic device that corresponds to said slot selected and the videos recorded thereafter are consecutive stored in accordance to the slots of said set of slots selected by said primary user or said at least one secondary user.

3. The method in claim 1, wherein said resultant video is created by defining a play back sequence of said recorded videos, based on said primary user's input.
4. The method in claim 1, wherein editing of said recorded videos and/or said resultant video comprises receiving an input from said primary user defining at least one editing permission for said at least one secondary user.

5. The method in claim 2, wherein after completion of recording and storing of said video in said slot, said slot is labeled to indicate that it has been used.

6. The method in claim 5, wherein said slot can be over-written by a new recorded video.

7. The method in claim 1, wherein recording and storing said plurality of individual videos further comprises acquiring an input from said primary user to define the number of said plurality of individual videos to be recorded.

8. The method in claim 1, wherein recording and storing said plurality of individual videos further comprises acquiring an input from said primary user to define the maximum time duration of each of said individual videos to be recorded.

9. The method in claim 4, wherein said editing is done either on the electronic device itself and/or over a network connecting the primary user and said at least one secondary user.
10. The method in claim 1, wherein, based on said primary user's input, said resultant video is shared over a network to enable a set of viewers to view said resultant video wherein said primary user defines said set of viewers.

11. The method in claim 1, wherein recording and storing said plurality of individual videos further comprises a collaborative recording of said plurality of 3 individual videos using said set of slots, wherein said individual videos are recorded based on receiving inputs from said primary user and/or said at least one secondary user at a server and said individual videos are simultaneously recorded by said primary user and/or said at least one secondary user, wherein the number of said individual videos to be recorded is defined by the primary user.

12. The method in claim 11, wherein the slots of said set of slots to be used by said at least one secondary user is either defined by the primary user or assigned automatically or chosen by said at least one secondary user.

13. The method in claim 11, wherein upon completion of recording said videos said resultant video is created using, said videos that are recorded by the primary user and/or said at least one secondary user in the primary user's device according to a playback sequence defined by an input received from said primary user.
14. The method in claim 13, wherein said resultant video is shared over a network based on an input received from said primary user to enable a defined set of secondary users to view said resultant video.

15. The method in claim 14, wherein resultant video is shared over said network based on an input received from said primary user to enable a set of secondary users to edit said resultant video wherein said set of secondary users is defined by the primary user.

16. The method in claim 15, wherein upon completion of editing by said set of secondary users, based on inputs received from said set of secondary users, at least one edited version(s) of said resultant video(s) is/are shared over a network to enable a set of viewers to view said resultant video wherein said set of viewers are defined according to an input received from said primary user.

17. The method in claim 1, wherein said resultant video is represented as a thumbnail.

18. The method in claim 17, wherein said thumbnail is de-constructed to a plurality of fragments and arranged in an initial jumbled order.

19. The method in claim 18, wherein, based on an input from said primary user, said resultant video is protected from unauthorized access by defining a particular key order in which said fragments need to be re-arranged.
20. The method in claim 19, wherein access to said resultant video is granted by receiving an input from a viewer of the video wherein said input corresponds to a rearrangement of said fragments to said key order.
START

NUMBER OF USERS DEFINED AND SLOTS ASSIGNED TO EACH USER

COLLAGE VIEW

SIMULTANEOUS RECORDING BY INDIVIDUAL USERS USING SLOTS ASSIGNED TO THEM

ALL USERS FINISH RECORDING

RECORDING COMPLETED

CREATE RESULTANT VIDEO IN PRIMARY USER'S DEVICE BY DEFINING A SEQUENCE OF PLAYBACK OF THE VIDEOSRecorded BY THE PRIMARY USER AND SECONDARY USERS.

PRIMARY USER SETS PERMISSION FOR ACCESSIBILITY AND EDITING OF CREATED VIDEO

EDITED VIDEO IS SHARED BY SECONDARY USERS TO ENABLE AUTHORIZED VIEWERS DEFINED BY PRIMARY USER TO VIEW VIDEO.

EDITING BY SECONDARY USERS IS PERFORMED

PRIMARY USER SHARES VIDEO FOR OTHERS TO SEE AND EDIT IF HE/SHE WISHES TO DO SO.

FIG. 17
START

Deconstruct video thumbnail into fragments

Define a key order in which fragments need to be arranged to allow access to concerned video

Rearrange current order of fragments to an initial jumbled order.

On receiving a request for access to concerned video, ask an entity that wishes to access said video to re-arrange order of fragments.

If order of fragments entered by entity wishing to access video matches key Order of fragments, unlock video.

FIG. 18