

METHOD AND SYSTEM OF PROCESSING A DIGITAL IMAGE

FIELD OF INVENTION

The invention relates to a method and system of processing a digital image.

BACKGROUND

A social networking service is an online service, platform, or website that focuses on facilitating the building of social networks or social relations among people who, for example, share interests, activities, backgrounds, or real-life connections. A social networking service consists of a representation of each user (often a profile), his/her social links, and a variety of additional services.

Currently, online photo-sharing and social networking services are based on relationships between users. Social networking and micro-blogging services focus on the sharing of text-based messages of up to 140 characters and are also based on relationships between users.

Conventional instant photo services may allow the wireless streaming of photos from cameras (e.g. professional DSLR, compact, "point & shoot") directly to a printer. The photos are taken from a designated photographer's camera and not from everyone's camera. Also, no digital image filters or post processing can be applied when the photos are taken from the designated camera. Moreover, personalization or "tagging" of the photos cannot be performed; and captions or comments cannot be added. Finally, synchronisation to social networking services cannot be performed.

A need therefore exists to provide a method and system of processing a digital image that seeks to address at least one of the abovementioned problems.

SUMMARY

According to the first aspect of the invention, there is provided a method of processing a digital image, the method comprising the steps of: obtaining an unprocessed digital image and personalization data; uploading the unprocessed digital image and the personalization data onto a cloud computing server; combining

the unprocessed digital image with the personalization data to create a processed digital image; and printing the processed digital image based on a unique identifier.

The unprocessed digital image may be obtained using a digital image capturing apparatus or obtained from an existing digital image library.

The personalization data may comprise a user's profile information and/or captions.

The step of combining the unprocessed digital image with the personalization data may comprise the step of arranging the unprocessed digital image and personalization data in a predefined layout.

The method may further comprise the steps of:

issuing the unique identifier to a user;

associating the unique identifier with the processed digital image;

obtaining the unique identifier from the user prior to printing; and

printing the processed digital image only if the obtained unique identifier matches the unique identifier associated with the processed digital image.

The unique identifier may comprise a QR code, barcode, and/or personal identification number.

The method may further comprise the steps of:

collecting information associated with the processed digital image;

collating the information associated with the processed digital image; and

publishing the information associated with the processed digital image.

The information comprises symbols, words and/or colours.

The method may further comprise the steps of displaying: (i) the published information associated with the processed digital image; and (ii) the processed digital image; on a display device.

According to the second aspect of the invention, there is provided a system for processing a digital image, comprising: means for obtaining an unprocessed digital image and personalization data; means for uploading the unprocessed digital

image and the personalization data onto a cloud computing server; means for combining the unprocessed digital image with the personalization data to create a processed digital image; and a printer configured to print the processed digital image based on a unique identifier.

According to the third aspect of the invention, there is provided a computer readable medium, having a program recorded thereon, wherein the program is configured to make a computer execute a method of processing a digital image according to the first aspect.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a schematic of the workflow between a user and the social mobile cloud printing platform according to an embodiment of the present invention.

Figure 2 is a flowchart illustrating a method of processing a digital image, according to an embodiment of the present invention.

Figure 3 is a schematic of a computer system for implementing the system and method for processing a digital image in example embodiments.

DETAILED DESCRIPTION

Some portions of the description which follows are explicitly or implicitly presented in terms of algorithms and functional or symbolic representations of operations on data within a computer memory. These algorithmic descriptions and functional or symbolic representations are the means used by those skilled in the data processing arts to convey most effectively the substance of their work to others skilled in the art. An algorithm is here, and generally, conceived to be a self-consistent sequence of steps leading to a desired result. The steps are those requiring physical manipulations of physical quantities, such as electrical, magnetic or optical signals capable of being stored, transferred, combined, compared, and otherwise manipulated.

Unless specifically stated otherwise, and as apparent from the following, it will be appreciated that throughout the present specification, discussions utilizing terms such as “scanning”, “calculating”, “determining”, “replacing”, “generating”,

“initializing”, “outputting”, or the like, refer to the action and processes of a computer system, or similar electronic device, that manipulates and transforms data represented as physical quantities within the the computer system into other data similarly represented as physical quantities within the computer system or other information storage, transmission or display devices.

The present specification also discloses apparatus for performing the operations of the methods. Such apparatus may be specially constructed for the required purposes, or may comprise a general purpose computer or other device selectively activated or reconfigured by a computer program stored in the computer. The algorithms and displays presented herein are not inherently related to any particular computer or other apparatus. Various general purpose machines may be used with programs in accordance with the teachings herein. Alternatively, the construction of more specialized apparatus to perform the required method steps may be appropriate. The structure of a conventional general purpose computer will appear from the description below.

In addition, the present specification also implicitly discloses a computer program, in that it would be apparent to the person skilled in the art that the individual steps of the method described herein may be put into effect by computer code. The computer program is not intended to be limited to any particular programming language and implementation thereof. It will be appreciated that a variety of programming languages and coding thereof may be used to implement the teachings of the disclosure contained herein. Moreover, the computer program is not intended to be limited to any particular control flow. There are many other variants of the computer program, which can use different control flows without departing from the spirit or scope of the invention.

Furthermore, one or more of the steps of the computer program may be performed in parallel rather than sequentially. Such a computer program may be stored on any computer readable medium. The computer readable medium may include storage devices such as magnetic or optical disks, memory chips, or other storage devices suitable for interfacing with a general purpose computer. The computer readable medium may also include a hard-wired medium such as exemplified in the Internet system, or wireless medium such as exemplified in the GSM mobile telephone system. The computer program when loaded and executed

on such a general-purpose computer effectively results in an apparatus that implements the steps of the preferred method.

The invention may also be implemented as hardware modules. More particular, in the hardware sense, a module is a functional hardware unit designed for use with other components or modules. For example, a module may be implemented using discrete electronic components, or it can form a portion of an entire electronic circuit such as an Application Specific Integrated Circuit (ASIC). Numerous other possibilities exist. Those skilled in the art will appreciate that the system can also be implemented as a combination of hardware and software modules.

Embodiments of the invention seek to provide a social mobile cloud printing platform. The platform allows any supported devices to directly print a processed digital image. The platform also engages users socially by allowing additional information to be associated with the processed digital images that could be collated and published to achieve enhance social interaction.

In an embodiment of the present invention, there is provided a method of processing a digital image, the method comprising the steps of: (i) obtaining an unprocessed digital image and personalization data; (ii) uploading the unprocessed digital image and the personalization data onto a cloud computing server; (iii) combining the unprocessed digital image with the personalization data to create a processed digital image; and (iv) printing the processed digital image based on a unique identifier.

The unprocessed digital image can be obtained using a digital image capturing apparatus (e.g. a digital camera of a mobile phone or a digital WiFi camera). Alternatively, the unprocessed digital image can be obtained from the digital image library of the mobile phone or digital WiFi camera.

The personalization data comprises a user's profile information and/or captions about the digital image. The step of combining the unprocessed digital image with the personalization data involves arranging the unprocessed digital image and personalization data in a predefined layout.

Furthermore, the method can further comprise the steps of: (i) issuing the unique identifier to a user; (ii) associating the unique identifier with the processed digital image; (iii) obtaining the unique identifier from the user prior to printing; and (iv) printing the processed digital image only if the obtained unique identifier matches the unique identifier associated with the processed digital image. The unique identifier comprises a QR code, barcode, personal identification number or any other suitable unique identifier known in the art.

Furthermore, the method can further comprise the steps of: (i) collecting information associated with the processed digital image; (ii) collating the information associated with the processed digital image; and (iii) publishing the information associated with the processed digital image. The information comprises, for example, symbols, words and/or colours.

Different colours may be assigned different moods (e.g. blue for “peace / relaxation” and red for “passion”). Users can choose a colour that best represents a particular digital image. The number of votes for each colour is collated and the particular digital image is assigned the most popular colour. Thereafter, the published information associated with the processed digital image; and the processed digital image can be displayed on a display device (e.g. computer monitor). A digital images can be arranged and displayed according to their assigned colour.

In another embodiment of the present invention, there is provided a system for processing a digital image, comprising: (i) means for obtaining an unprocessed digital image and personalization data; (ii) means for uploading the unprocessed digital image and the personalization data onto a cloud computing server; (iii) means for combining the unprocessed digital image with the personalization data to create a processed digital image; and (iv) a printer configured to print the processed digital image based on a unique identifier. For example, the cloud computing server, website and printer software OS are implemented using Dotnet ASPX with Visual Basic. In another embodiment of the present invention, there is provided a computer readable medium (e.g. a CD-ROM), having a program recorded thereon, wherein the program is configured to make a computer execute a method of processing a digital image as described above.

In an embodiment of the invention, the social mobile cloud printing platform comprises a mobile phone application (iOS, Android, etc), a cloud computing server,

and a printer. Figure 1 is a schematic indicating the workflow between a user and the social mobile cloud printing platform according to an embodiment of the present invention.

At step 001, a user starts the mobile phone application. At step 002, the user launches the application. The user can login to the application using a unique login ID or via an existing social networking service (e.g. Facebook) (step 004). If login is via the existing social networking service, authentication and verification is done through an existing social networking service (step 035). If login is through the application itself, the user can either sign in using an existing profile (step 003 followed by step 036) or register a new account (step 005) wherein information is registered into the database of the cloud server. In any case, both login methods for a new user generate a unique identifier (step 006).

At step 007, after successful login, there are three distinct workflows that can be initiated: step 008 where an active event can be joined, step 009 where galleries can be browsed, or step 010 where a settings page can be accessed.

At step 020, an active event is selected and joined, and the application prompts for an event key and validates the event key (step 021). Upon successful verification, an image cart is shown which displays a queue for unprocessed digital images. The unprocessed digital images can be either taken using a digital image capturing apparatus (step 034) or chosen from an existing digital image library (step 024).

At step 025, digital image filters may be applied on the unprocessed digital images. At step 026, captions associated with the unprocessed digital images can be added, and the captions are combined with personalization data to create a processed digital image. The processed digital image is then sent for printing (step 027) wherein the processed digital information is tagged with a user unique identifier (step 033).

At step 033, the unique identifier is obtained prior to printing (e.g. the user scan his/her unique identifier at step 029) and the processed digital image is printed only if the obtained unique identifier matches the unique identifier tagged to the processed digital image (step 031).

At step 015, an event gallery is viewed, and the application prompts for event key and validates the event key (step 016). AT step 017, upon successful verification, processed digital images of various events are displayed. The application allows information to be associated with the processed digital image (step 018), wherein the information comprises of symbols, words and/or color. The application can be configured to collate and publish the relevant information associated with the processed digital image (step 019).

At step 019, the settings page is accessed, and the application is configured to allow users to amend their personalization data (step 012) and also obtain more information about the application (step 014). The settings page also allows users to sign out of an event and/or log off the application (step 013).

Figure 2 is a flowchart illustrating a method of processing a digital image, according to an embodiment of the present invention. At step 202, an unprocessed digital image and personalization data are obtained. At step 204, unprocessed digital image and the personalization data are uploaded onto a cloud computing server. At step 206, the unprocessed digital image is combined with the personalization data to create a processed digital image. At step 208, the processed digital image is printed based on a unique identifier.

The method and system of the example embodiment can be implemented on a computer system 300, schematically shown in Figure 3. It may be implemented as software, such as a computer program being executed within the computer system 300, and instructing the computer system 300 to conduct the method of the example embodiment.

The computer system 300 comprises a computer module 302, input modules such as a keyboard 304 and mouse 306 and a plurality of output devices such as a display 308, and printer 310.

The computer module 302 is connected to a computer network 312 via a suitable transceiver device 314, to enable access to e.g. the Internet or other network systems such as Local Area Network (LAN) or Wide Area Network (WAN).

The computer module 302 in the example includes a processor 318, a Random Access Memory (RAM) 320 and a Read Only Memory (ROM) 322. The

computer module 302 also includes a number of Input/Output (I/O) interfaces, for example I/O interface 324 to the display 308, and I/O interface 326 to the keyboard 304.

The components of the computer module 302 typically communicate via an interconnected bus 328 and in a manner known to the person skilled in the relevant art.

The application program is typically supplied to the user of the computer system 300 encoded on a data storage medium such as a CD-ROM or flash memory carrier and read utilising a corresponding data storage medium drive of a data storage device 330. The application program is read and controlled in its execution by the processor 318. Intermediate storage of program data may be accomplished using RAM 320.

It will be appreciated by a person skilled in the art that numerous variations and/or modifications may be made to the present invention as shown in the specific embodiments without departing from the spirit or scope of the invention as broadly described. The present embodiments are, therefore, to be considered in all respects to be illustrative and not restrictive.

CLAIMS

1. A method of processing a digital image, the method comprising the steps of:
obtaining an unprocessed digital image and personalization data;
uploading the unprocessed digital image and the personalization data onto a cloud computing server;
combining the unprocessed digital image with the personalization data to create a processed digital image; and
printing the processed digital image based on a unique identifier.
2. The method as claimed in claim 1, wherein the unprocessed digital image is obtained using a digital image capturing apparatus.
3. The method as claimed in claim 1, wherein the unprocessed digital image is obtained from an existing digital image library.
4. The method as claimed in any one of the preceding claims, wherein the personalization data comprises a user's profile information and/or captions.
5. The method as claimed in any one of the preceding claims, wherein the step of combining the unprocessed digital image with the personalization data comprises the step of arranging the unprocessed digital image and personalization data in a predefined layout.
6. The method as claimed in any one of the preceding claims, further comprising the steps of:
issuing the unique identifier to a user;
associating the unique identifier with the processed digital image;
obtaining the unique identifier from the user prior to printing; and
printing the processed digital image only if the obtained unique identifier matches the unique identifier associated with the processed digital image.
7. The method as claimed in any one of the preceding claims, wherein the unique identifier comprises a QR code, barcode, and/or personal identification number.

8. The method as claimed in any one of the preceding claims, further comprising the steps of:

- collecting information associated with the processed digital image;
- collating the information associated with the processed digital image; and
- publishing the information associated with the processed digital image.

9. The method as claimed in claim 8, wherein the information comprise symbols, words and/or colours.

10. The method as claimed in claim 8 or 9, further comprising the step of displaying:

- (i) the published information associated with the processed digital image; and
- (ii) the processed digital image;

on a display device.

11. A system for processing a digital image, comprising:

- means for obtaining an unprocessed digital image and personalization data;
- means for uploading the unprocessed digital image and the personalization data onto a cloud computing server;
- means for combining the unprocessed digital image with the personalization data to create a processed digital image; and

a printer configured to print the processed digital image based on a unique identifier.

12. A computer readable medium, having a program recorded thereon, wherein the program is configured to make a computer execute a method of processing a digital image, as claimed in any one of claims 1 – 10.