

[0045] Also provided is a system implementing the above-described method for providing personal information about a subject. Referring again to FIG. 1, at **101**, the system may capture a facial image of a subject by a network camera or an onboard camera of a user device (e.g., mobile device). At **102**, the system may optionally preprocess the captured facial images on the user device. At **103**, the system may transmit the facial images (e.g., preprocessed) facial images to a server device for additional processing and performing facial recognition. At **104**, the system may perform facial recognition based on a neural network algorithm (e.g., deep convolutional neural network (CNN)). At **105**, the system may match the facial images with the facial images stored in databases (provided at **106**). The image matching can be performed based on a nearest neighbor search, such as a k nearest neighbor (k-NN) algorithm, to identify one or more candidate images. The candidate images match the captured facial images based on one or more predetermined criteria. At **107**, the system may retrieve personal information of the one or more candidate images. The personal information may include an online profile of the subject on a social networking website, a professional networking website, or an employer website. At **108**, the system transmits and causes the user device to display the retrieved personal information. Alternatively and/or additionally, the system may also cause the user device to display an alert message, based on, for example, a potential risk to the public posed by the subject.

[0046] The disclosed system can be operated via desktop or remotely via smartphone, enabling users who conduct criminal investigations, background checks, etc. to instantly establish the identify and obtain biographical data on individuals via one or more facial databases with supplemental links to social media, conventional media, professional websites, etc. In the process of instantly matching a face via the facial database, the system also finds and posts the name of the individual being searched. The system also instantly posts live links to the individual's publicly accessible social media, conventional media, etc.

[0047] Unless specifically stated otherwise as apparent from the above discussion, it is appreciated that throughout the description, discussions utilizing terms such as “processing” or “computing” or “calculating” or “determining” or “identifying” or “displaying” or “providing” or the like, refer to the action and processes of a computer system, or similar electronic computing device, that manipulates and transforms data represented as physical (electronic) quantities within the computer system memories or registers or other such information storage, transmission or display devices.

[0048] The system may transmit and display the information about a person on a user device embedding a client system **920** (also see FIG. 9). The user device may be an electronic device including hardware, software, or embedded logic components or a combination of two or more such components and capable of carrying out the appropriate functionalities implemented or supported by the client systems. As an example and not by way of limitation, a client system may include a computer system such as a desktop computer, notebook or laptop computer, netbook, a tablet computer, handheld electronic device, cellular telephone, smartphone, other suitable electronic device, or any suitable combination thereof. A client system may enable a network

user at the client system to access the network. A client system may enable its user to communicate with other users at other client systems.

[0049] FIG. 3 shows an example of the server side implementation for providing the information about a person. For example, the system may include a firewall to safeguard the security of the communication between server devices and client devices over the Internet. For the web crawling function, the system may include one or more search engine workers, which scan various websites and identifies images containing facial images and other information. The system may store the identified images and other information in a document store cluster. The web crawling tasks are organized in a crawler task queue. The information retrieved by the web crawler can then be indexed and stored in databases to support later searches in response to user inputs. For the web searching function, the system may include web server which handles the requests received from user devices and transmits the results to the user devices, by interacting with database(s) for SQL user data, database(s) for SQL search data, NNDB index cluster(s), and GPU cluster(s).

B. Image Capturing and Processing

[0050] The system may include a camera (still, video, or both) for capturing facial images. Non-limiting examples of cameras include cameras installed on a user device, network or web cameras, USB cameras, analog or digital cameras, internet protocol (IP) cameras, analog or digital video cameras, closed-circuit cameras (CCTV), etc. In some embodiments, the system may employ a network camera server, another type of network camera. The network camera receives an image signal from a plurality of cameras comprising a lens and image sensor and each being separated in a place outside and converts it to one united image signal to transmit it through a network, and performs a network server function for the image signal photographed by a plurality of cameras. The above stated network camera or network camera server has its own unique IP and has a function of transmitting the obtained image signal through a network at high speed of the minimum 10 frames to the maximum 30 frames per second in a compression method of JPEG or M-JPEG, Wavelet compression method, or MPEG compression method using a standard web browser without an additional PC. The system can also include a surveillance camera adapted to be connected to an internet protocol network. In some embodiments, the facial recognition technology can be incorporated into a networked surveillance system.

[0051] In some embodiments, the facial image is captured by a camera-enabled user device. In some embodiments, the image is captured by a network camera. In some embodiments, the image is imported from a second user device. In some embodiments, the camera can be enclosed in a customized case. The customized case is designed to entirely enclose and protect a user device, such as iPhones and Android phones, with an opening for the phone's camera lens. The case is designed to be mounted on a stand-alone base in the wall of a lobby, hallway or doorway. The case fabricated in metal or plastic.

[0052] FIG. 5 shows an example interface of a search application on a user device (e.g., mobile device) for capturing facial images of a person. The interface **500** includes one or more icons to receive user inputs to invoke certain functions of the user device. For example, the system may