SERVER DEVICE FOR PROVIDING CURRICULUM VITAE GENERATION AND MANAGEMENT SERVICE AND METHOD OF OPERATING THE SAME

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is based on and claims priority under 35 U.S.C. § 119 to Korean Patent Application No. 10-2022-0106258, filed on August 24, 2022, in the Korean Intellectual Property Office, the disclosures of which is incorporated by reference herein in its entirety.

BACKGROUND

FIELD

[0001] Embodiments of the disclosure relate to a device for providing a curriculum vitae generation and management service and a method for operating the same.

DESCRIPTION OF RELATED ART

[0002] Gig work refers to a type of labor in which companies hire workers as short-term contract workers or temporary workers as needed and pay them. Gig work may be provided on online platforms and is expanding into a variety of work sectors, including delivery, designated driver services, and messenger services, as well as restaurant assisting and serving, care and hospice, cleaning, and security services.

[0003] In this regard, blockchain technology may be used to fairly distribute work among gig workers and provide objective evaluation and reasonable compensation for work performed. For example, cryptocurrencies operated based on blockchain technology may be used to minimize fees and provide appropriate compensation. Also, for example, data related to work evaluation may be recorded via blockchain to generate tamper-proof data and accumulate reliable evaluation data on

gig workers. It is also possible to minimize the risk of hacking while easily verifying the identity of gig workers.

SUMMARY

[0004] To provide a gig work service, the online platform needs to collect, analyze, and manage the content of the work performed by gig workers to generate a curriculum vitae (CV) and provide information when gig workers need the information. The content of the work performed by gig workers may be recorded in various forms, such as work-related image data and video data, as well as profile and text data of gig workers, and thus, TR data may have a large volume.

[0005] Various embodiments of the disclosure provide a device for defining a task receipt (TR) and generating a CV based thereon and a method for operating the same.

[0006] Various embodiments of the disclosure also provide a device for safely storing the TRs received from gig workers using blockchain technology to generate and provide a reliable CV and a method for operating the same.

[0007] Various embodiments of the disclosure also provide a device for storing TR data received from gig workers in a decentralized space to store various forms of CVs and provide them and a method for operating the same.

[0008] A method for operating a server device for generating and managing curriculum vitaes (CVs) according to an embodiment of the disclosure may comprise receiving, from at least one client device, task receipt (TR) data including information about a task performed by a user of the at least one client device, determining whether the TR data includes file data having a predetermined size or more, when it is determined that the TR data does not include the file data having the predetermined size or more, transmitting a first storage request including the TR data to a blockchain-based cloud server storing the TR data of the at least one client device, and when

it is determined that the TR data includes file data having the predetermined size or more, transmitting a second storage request including at least a portion of the TR data to an interplanetary file system (IPFS) connected to the server device.

[0009] A server device for generating and managing CVs of a plurality of client devices according to an embodiment of the disclosure may comprise a communication unit, a memory, and at least one processor operably connected with the communication unit and the memory. The at least one processor may receive, from at least one client device, task receipt (TR) data including information about a task performed by a user of the at least one client device, determines whether the TR data includes file data having a predetermined size or more, when it is determined that the TR data does not include the file data having the predetermined size or more, transmit, through the communication unit, a first storage request including the TR data to a blockchain-based cloud server storing the TR data of the at least one client device, and when it is determined that the TR data includes file data having the predetermined size or more, transmit, through the communication unit, a second storage request including at least a portion of the TR data to an interplanetary file system (IPFS) connected to the server device.

[0010] According to various embodiments of the disclosure, the server device and the method for operating the same may efficiently manage task receipt (TR) data received from a client device.

[0011] Further, the server device and the method for operating the same may generate and manage history information about a client based on a large volume of TR data.

[0012] Further, the server device and the method for operating the same may filter TR data stored based on a request of a client.

[0013] Effects of the disclosure are not limited to the foregoing, and other unmentioned effects would be apparent to one of ordinary skill in the art from the following description. In other words, unintended effects in practicing embodiments of the disclosure may also be derived by one of

ordinary skill in the art from the embodiments of the disclosure.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] The above and other aspects, features, and advantages of certain embodiments of the disclosure will be more apparent from the following description taken in conjunction with the accompanying drawings, in which:

[0015] FIG. 1 illustrates an example of a CV generation and management system according to an embodiment;

[0016] FIG. 2 is a block diagram illustrating a configuration of a server device according to an embodiment;

[0017] FIG. 3 is a flowchart illustrating operations of a server device according to an embodiment;

[0018] FIG. 4 is a signaling flowchart for storing task receipt (TR) data according to an embodiment;

[0019] FIG. 5 is a signaling flowchart for generating a curriculum vitae (CV) according to an embodiment;

[0020] FIG. 6 illustrates an example of CV generation according to an embodiment;

[0021] FIG. 7 is a signaling flowchart for authenticating TR data according to an embodiment; and

[0022] FIG. 8 is a signaling flowchart for charging according to an embodiment.

[0023] The same or similar reference denotations may be used to refer to the same or similar elements throughout the specification and the drawings.

DETAILED DESCRIPTION

[0024] Embodiments of the disclosure are now described with reference to the accompanying

drawings in such a detailed manner as to be easily practiced by one of ordinary skill in the art. However, the disclosure may be implemented in other various forms and is not limited to the embodiments set forth herein. The same or similar reference denotations may be used to refer to the same or similar elements throughout the specification and the drawings. Further, for clarity and brevity, no description is made of well-known functions and configurations in the drawings and relevant descriptions.

[0025] FIG. 1 illustrates an example of a CV generation and management system according to an embodiment.

[0026] Referring to FIG. 1, a CV generation and management system 100 according to an embodiment may include a client device 110, a management server 120, an identity and access management (IAM) server, a blockchain-based cloud server 140 (hereinafter, referred to as a cloud server), an authentication server 141, an interplanetary file system (IPFS), an external server 160, and a billing server 170.

[0027] The client device 110 according to an embodiment may refer to an electronic device of a gig worker (hereinafter, referred to as a “user”) using a CV generation and management service. For example, the client device 110 may refer to the user's portable terminal (e.g., a smartphone, a personal digital assistant (PDA), a tablet PC, a wearable device, or the like), a laptop, a PC, or the like.

[0028] In an embodiment, the client device 110 may generate task receipt (TR) data. The TR data may include data on information about the task performed by the user. For example, the TR data may include the type of the task performed by the user, the date, the time, the place, the task content, and evaluation information about the user.

[0029] In an embodiment, the TR data may be generated for each task performed by the user. The TR data may include identification information TR ID generated for each TR data.

[0030] In an embodiment, the client device 110 may transmit the generated TR data to the management server 120.

[0031] In an embodiment, the client device 110 may request curriculum vitae (CV) data from the management server 120.

[0032] In an embodiment, the client device 110 may receive CV data from the management server 120.

[0033] The management server 120 according to an embodiment may refer to a server that performs operations related to storing and managing TR data and generating CV data.

[0034] In an embodiment, the management server 120 may determine a method for storing the TR data received from the client device 110. For example, the management server 120 may determine to store TR data in the cloud server 140. For example, the management server 120 may determine to store TR data in the cloud server 140 and the interplanetary file system (IPFS) 150.

[0035] In an embodiment, the management server 120 may request the cloud server 140 and the IPFS 150 to store TR data. Accordingly, the management server 120 may transmit TR data to the cloud server 140 or the IPFS 150.

[0036] In an embodiment, the management server 120 may communicate with the identity and access management (IAM) server 130 to obtain a unique identifier of the user. For example, the management server 120 may transmit a client identifier request to the IAM server 130. For example, the management server 120 may receive the client identifier from the IAM server 130.

[0037] The IAM server 130 according to an embodiment may refer to a server for managing the user's identifier.

[0038] In an embodiment, the IAM server 130 may search for and generate a user-specific identifier based on the TR data transmitted from the client device 110 to the management server 120.

[0039] In an embodiment, the IAM server 130 may determine whether there is an identifier corresponding to the user ID of the TR data.

[0040] In an embodiment, the IAM server 130 may generate a user-specific identifier based on the user ID included in the TR data. The identifier generated by the IAM server 130 may be transmitted together when the corresponding TR data is stored in the blockchain-based cloud server 140 or the IPFS 150.

[0041] The cloud server 140 according to an embodiment may refer to a server that stores TR data received from the management server 120.

[0042] In an embodiment, the cloud server 140 may receive a request for storing TR data and the TR data from the management server 120. For example, when the management server 120 requests to store TR data, a transaction (including TR data and requesting to store TR) may be generated, and a smart contract of the cloud server 140 may be invoked, so that the TR data may be stored in a storage space of the cloud server 140. The generated transaction may be stored in blocks constituting a private network (a personal network including the cloud server 140 and the authentication server 141). Accordingly, the TR data generated from the client device 110 may be safely stored against external hacking.

[0043] In an embodiment, when the management server 120 requests TR data, the cloud server 140 may transmit at least one stored TR data.

[0044] The authentication server 141 according to an embodiment may refer to a server for performing authentication of TR data.

[0045] In an embodiment, when the authentication server 141 receives the authentication request for the TR data from the cloud server 140, the authentication server 141 may transmit the TR data to an external server related to the TR data to request authentication.

[0046] In an embodiment, when the user receives a request for authentication of TR data

generated by performing a government project, the authentication server 141 may communicate with the external server 160 to request authentication of the TR data.

[0047] In an embodiment, the authentication server 141 may also receive accredited authentication of the certificate stored by the user for CV.

[0048] In an embodiment, the content of the accredited authentication may include an indicator (e.g., “”) indicating that the accredited authentication has been obtained when generating the CV.

[0049] The IPFS 150 according to an embodiment may refer to decentralized storage. In an embodiment, when receiving a request for storing TR data from the management server 120, the IPFS 150 may store the TR data or at least part of the TR data. For example, the IPFS 150 may store image data included in the TR data. The image data may include data about a still image and data about a dynamic image (e.g., a moving image) (video).

[0050] The external server 160 according to an embodiment may refer to a server that performs authentication on TR data in response to the authentication request received from the authentication server 141.

[0051] The billing server 170 according to an embodiment may refer to a server that manages energy (gas) used to store TR data according to a billing request of the management server 120 and calculates an amount for billing based thereupon.

[0052] In the following description and drawings of the disclosure, the management server 120 may be referred to as a “task handler”. Also, the IAM server 130 may be referred to as an “IAM handler”. Also, the cloud server 140 may be referred to as a “task smart contract”. Also, the authentication server 150 may be referred to as an “oracles smart contract”. Also, the billing server 170 may be referred to as a “billing handler”.

[0053] FIG. 2 is a block diagram illustrating a configuration of a server device according to an embodiment. The server device 200 according to an embodiment may refer to a server device

corresponding to the management server 120 of FIG. 1.

[0054] Referring to FIG. 2, the server device 200 according to an embodiment may include a processor 210, a memory 220, and a communication unit 230. The components illustrated in FIG. 2 are components related to the description of an embodiment according to the disclosure, and other components for performing the functions of the server device may be included in addition to the illustrated components, and components illustrated may be omitted.

[0055] The memory 220 according to an embodiment is a storage medium used by the server device 200, and may store data such as at least one instruction 221 or configuration information corresponding to at least one program. The program may include an operating system (OS) program and various application programs.

[0056] The storage unit 220 may include at least one type of storage medium of flash memory types, hard disk types, multimedia card micro types, card types of memories (e.g., SD or XD memory cards), random access memories (RAMs), static random access memories (SRAMs), read-only memories (ROMs), electrically erasable programmable read-only memories (EEPROMs), programmable read-only memories (PROMs), magnetic memories, magnetic disks, or optical discs.

[0057] The communication unit 230 according to an embodiment of the disclosure may perform direct (e.g., wired) communication between the server device 200 and an external electronic device (e.g., the client device 110, the IAM server 130, the billing server 170, the cloud server 140, or the IPFS 150). For example, the communication unit 230 may receive TR data transmitted from the client device 110. For example, the communication unit 230 may transmit TR data to the cloud server 140 and the IPFS 150.

[0058] In an embodiment, the communication unit 230 may include a wireless communication unit (e.g., a cellular communication module, a short-range wireless communication module, or a

global navigation satellite system (GNSS) communication module) or a wired communication unit. A corresponding communication unit among these communication units may communicate with an external electronic device (e.g., the client device 110, the IAM server 130, the billing server 170, the cloud server 140, or the IPFS 150) via a network (e.g., a long-range communication network such as a legacy cellular network, a 5G network, a next-generation communication network, the Internet, or a computer network (e.g., LAN or WAN)).

[0059] In an embodiment, the communication unit 230 may support a 5G network, after a 4G network, and next-generation communication technology, e.g., new radio (NR) access technology. The NR access technology may support enhanced mobile broadband (eMBB), massive machine type communications (mMTC), or ultra-reliable and low-latency communications (URLLC). The communication unit 230 may support a high-frequency band (e.g., the mmWave band) to achieve, e.g., a high data transmission rate. The communication unit 230 may support various technologies for securing performance on a high-frequency band, such as, e.g., beamforming, massive multiple-input and multiple-output (massive MIMO), full dimensional MIMO (FD-MIMO), array antenna, analog beam-forming, or large scale antenna.

[0060] In an embodiment, the communication unit 230 may support various requirements specified in the server device 200, an external electronic device (e.g., the client device 110, the IAM server 130, the billing server 170, the cloud server 140, or the IPFS 150), or the network system.

[0061] The processor 210 according to an embodiment may execute, for example, software (e.g., a program) to control at least one other component (e.g., a hardware or software component) of the server device 200 coupled with the processor 210, and may perform various data processing or computation.

[0062] In an embodiment, as at least part of the data processing or computation, the processor

210 may store a command or data received from another component (e.g., the communication unit 230) onto a volatile memory, process the command or the data stored in the volatile memory, and store resulting data in a non-volatile memory.

[0063] In an embodiment, the processor 210 may include a main processor (e.g., a central processing unit (CPU) or an application processor (AP)), or an auxiliary processor (e.g., a graphics processing unit (GPU), a neural processing unit (NPU), or a communication processor (CP)) that is operable independently from, or in conjunction with, the main processor 121.

[0064] In an embodiment, the processor 210 may receive TR data including information about a task performed by a user of the at least one client device from the at least one client device.

[0065] In an embodiment, the processor 210 may determine whether the TR data includes image data having a predetermined size or more.

[0066] In an embodiment, when it is determined that the TR data does not include image data having a predetermined size or more, the processor 210 may transmit a first storage request including the TR data to the cloud server storing the TR data of the plurality of client devices.

[0067] In an embodiment, when it is determined that the TR data includes image data having a predetermined size or more, the processor 210 may transmit a second storage request including at least a portion of the TR data to the IPFS.

[0068] In an embodiment, in response to transmitting the second storage request to the at least one node, the processor 210 may transmit the remaining portion of the TR data, which is not the at least portion, to the cloud server.

[0069] In an embodiment, in response to determining whether the TR data includes image data having a predetermined size or more, the processor 210 may generate a TR table including information about the storage location of the TR data.

[0070] In an embodiment, the processor 210 may receive a CV transmission request for

requesting to transmit the CV of the user of the at least one client device from the at least one client device.

[0071] In an embodiment, the processor 210 may transmit a TR transmission request for requesting one or more pieces of TR data of the user to at least one of the cloud server and the IPFS, based on information about the location where the TR data included in the TR table is stored.

[0072] FIG. 3 is a flowchart illustrating operations of a server device according to an embodiment. The server device of FIG. 3 may refer to a device corresponding to the management server 120 of FIG. 1 and the electronic device 200 of FIG. 2. The operations of the server device illustrated in FIG. 3 may include all or some of the operations of the management server 120 of FIGS. 4 and 5.

[0073] According to an embodiment, in operation 310, the server device may receive TR data including information about a task performed by a user of the at least one client device from the at least one client device.

[0074] In an embodiment, the client device may refer to the server device used by the user.

[0075] In an embodiment, the server device may receive each piece of TR data from a plurality of client devices.

[0076] In an embodiment, the TR data may refer to a result of a completed task generated through a specific application by the user's server device, i.e., the client device, when the user completes the task.

[0077] In an embodiment, the TR data may be generated for each task performed by the user.

[0078] In an embodiment, the TR data may include information about the task performed by the user of the client device.

[0079] In an embodiment, the TR data may include the identification number ID, the user key value, the category of the task, the sub-category, the task execution date, the task execution time, the task execution location, the employer’s evaluation of the performed task, the amount (income)

paid for the performed task, and the attachment.

[0080] In an embodiment, the TR data may be generated and managed in the form of a table. For example, the TR data may be generated and managed as shown in Table 1 below.

[0081] [Table 1]

Category	Data
TR ID	001
User Key	DFKDUYF08A90FD
Category	Restaurant
Sub Category	Serving
Date	June 03, 2022
Time	3 Hours
Location	Seoul/Gangnam-gu
Feedback	Excellent
Income	60,000
Attachment(Hash)	Movie clip, Photos, Output

[0082] The contents included in Table 1 are merely an example, and the TR data may include not only the contents included in Table 1, but also other contents related to the task performed by the user, and some of the contents included in Table 1 may be omitted. Referring to Table 1, the TR ID may refer to the unique ID of the task performed. Category and Sub-category may refer to items for classifying tasks completed by the user. User Key may refer to the unique identifier of the user. Date and time may refer to the date and time when the user performs the task. Location may refer to the place where the user performs the task. Feedback may refer to the employer's evaluation of the task performed. Income may refer to the income obtained by the user by performing the task. Attachment is additional information about the task performed by the user, and may include image data such as a video or a photo.

[0083] In an embodiment, the TR data generated in the client device may be transmitted to the server device according to the user input identified in the client device.

[0084] In an embodiment, although not shown in the drawings, the server device may receive information about the user's profile (e.g., information about personal information, information about certificates, academic background information, or the like) from the client device. The server device may transmit, to the cloud server, a message requesting to store the user profile information received from the client device. Accordingly, the cloud server may store information about the user's profile. The user profile information may be included when generating the user's CV as described below.

[0085] In an embodiment, the server device may request a user-specific identifier (e.g., a key value) from the IAM server. Accordingly, the server device may receive the unique identifier of the user from the IAM server. In an embodiment, although not illustrated, when there is no unique key value of the user, the IAM server may generate the key value of the user. For example, although not illustrated in the drawings, the server device may transmit necessary information to the IAM server so that the IAM server may generate a unique key value of the user. The server device may receive information required for the IAM server to generate a key value from the client device.

[0086] According to an embodiment, in operation 320, the server device may determine whether the TR data includes image data having a predetermined size or more.

[0087] In an embodiment, when receiving TR data from the client device, the server device may analyze the TR data. The TR data may be mainly composed of text, but may further include data related to an image or a video to more specifically show the task performed by the user. In this case, since storing large amounts of data in a cloud server may cost a large amount of money, large amounts of data may be stored in IPFS to reduce costs.

[0088] In an embodiment, the image data having the predetermined size or more may include the

images included in the TR data in addition to an image (e.g., a profile photo, etc.) related to the user's personal information. For example, the image data larger than or equal to the predetermined size may include image data related to the performed task (e.g., a photo indicating the result of the performed task, a photo showing the process of performing the task, video data obtained by recording the user performing the task, etc.).

[0089] In an embodiment, when the TR data includes an image other than the image data related to the personal information, the server device may determine that the TR data includes image data having a predetermined size or more.

[0090] In an embodiment, when the size of the TR data exceeds a threshold, the server device may determine that the TR data includes image data having a predetermined size or more.

[0091] In an embodiment, the server device may identify whether the TR data includes a large file. For example, the image file may include an image file such as jpeg, png, and gif, a file format such as pdf and tiff, a video file, and an audio file. The file may be data including information about the task performed by the user. For example, when the task performed is a lecture on a specific topic, additional information related to the lecture may be added to the TR data. Further, e.g., if prior training is required to perform a specific task, the TR data for the task may further include completion information proving that the prior training has been completed.

[0092] In an embodiment, when the TR data includes a file, the server device may identify whether a file such as an image or a pdf is the same as a previously stored file in order to avoid storing duplicate files.

[0093] In an embodiment, when the file is not the same as the previously stored file, the server device may identify whether sensitive information is included in the file. For example, the sensitive information may include personal information (e.g., a resident registration number). The server device may extract text information using a technology such as OCR to determine whether there

is sensitive information. When sensitive information is identified, the server device may blur and store the corresponding portion.

[0094] In an embodiment, the server device may generate a table as shown in Table 2 below.

[0095] [Table 2]

TR ID	Task SC	IPFS (Hash)	Image	Movie	Audio	Doc
000	O	X				
001	O	O		32489E..		DSFJSR..
002						

[0096] As described above, when the TR data includes an additional image file and thus the size of the TR data is large, it is possible to efficiently manage the TR data by storing it in the IPFS rather than the cloud server. In an embodiment, when the server device determines that the TR data does not include image data having a predetermined size or more, the server device may transmit a first storage request including the TR data to the cloud server storing the TR data of the plurality of client devices in operation 330. In an embodiment, when the server device determines that the TR data does not include image data having a predetermined size or more, the size is not large so that it may sufficiently be stored in the cloud server, the server device transmits a storage request for requesting to store the TR data in the cloud server.

[0097] In an embodiment, the first storage request may include TR data to be stored in the cloud server while simultaneously requesting the cloud server to store the TR data.

[0098] According to an embodiment, when the server device determines that the TR data includes image data having a predetermined size or more, in operation 340, the server device may transmit a second storage request including at least a portion of the TR data to an interplanetary file system (IPFS) connected to the server device. When the server device determines that the TR data includes image data having a predetermined size or more, the size of the TR data is relatively large, it is

more efficient to store the TR data through the IPFS than to store the TR data in the cloud server. Thus, the TR data may be divided and stored in the cloud server and the IPFS.

[0099] In an embodiment, at least a portion of the TR data transmitted by the server device to the IPFS may include image data included in the TR data. By storing a high volume of data in the IPFS, efficient TR data management may be possible.

[00100] In an embodiment, the server device may generate a table regarding the location where TR data is stored. For example, when the server device divides and stores the TR data in the cloud server and the IPFS, the server device may generate a table indicating that the TR data is divided and stored as shown in Table 3 below.

[00101] [Table 3]

TR ID	Chain	IPFS(Hash value)
000	O	X
001	O	DSKFLJOIFWJJV232RWEFDWSKLFJLW
002		

[00102] In an embodiment, the server device may receive a CV request from the client device. Curriculum vitae (CV) may refer to data including information about the user's history. In an embodiment, when the server device receives a CV request from the client device, the server device may identify the location where desired TR data is stored, based on the TR data table generated and managed by the server device for each client device. For example, when TR data 001, 002, 003, and 004 are required to generate the user's CV, the server device may identify the location where each TR data is stored, request the cloud server and/or IPFS to transmit corresponding TR data and receive it, and aggregate the received TR data to generate a CV.

[00103] In an embodiment, the server device may request at least one piece of TR data to be included in the CV from the cloud server based on the key value of the user.

[00104] In an embodiment, the CV request transmitted from the client device to the server device and the TR data request transmitted from the server device to the cloud server may include filtering information (e.g., reception of only TR data about the task performed during a specific period, reception of only TR data about the task performed at a specific place, reception of only TR data about the task belonging to a specific category, or reception of only TR data including feedback of a predetermined criterion or more) that allows the user to extract and obtain only desired TR data among the plurality of TR data stored in the cloud server or IPFS.

[00105] In an embodiment, the TR data request may refer to a signal for requesting the client device to transmit at least one piece of TR data among pieces of TR data related to tasks performed by the user, stored in the cloud server and the IPFS to generate a desired CV. A specific operation for generating the CV is described below in detail with reference to FIG. 5.

[00106] In an embodiment, although not illustrated in the drawings, the server device may request the cloud server to authenticate the TR data.

[00107] In an embodiment, although not illustrated in the drawings, the server device may transmit a charging request for TR data to the cloud server.

[00108] FIG. 4 is a signaling flowchart for storing task receipt (TR) data according to an embodiment. In the description of FIG. 4, parts described in connection with FIGS. 1, 2, and 3 may be omitted. The operation illustrated in FIG. 4 illustrates a process in which one piece of TR data is stored, and each piece of TR data generated by the client device 1100 may be stored through the process illustrated in FIG. 4. The operation of the management server 120 of FIG. 4 may include the operation of the server device of FIG. 3. Although only one client device 110 is illustrated in FIG. 4, this is for convenience of description, and there may be a plurality of client devices communicating with the management server 120.

[00109] According to an embodiment, in operation 401, the client device 110 may transmit

a TR data storage request to the management server 120. The TR data storage request may include TR data regarding the task performed by the user.

[00110] According to an embodiment, in operation 403, the management server 120 may request the key value of the user from the IAM server 130.

[00111] According to an embodiment, in operation 405, the IAM server 130 may transmit the key value of the user to the management server 120.

[00112] In an embodiment, when there is no key value of the user, the IAM server 130 may generate a unique key value of the user. Although not illustrated in the drawings, the IAM server 130 may request and obtain information necessary to generate a unique key value of the user from the management server 120 and the client device 110.

[00113] According to an embodiment, in operation 407, the management server 120 may determine the storage location of the TR data received in operation 401.

[00114] In an embodiment, the management server 120 may determine to store the TR data in the cloud server 140, or may determine to divide and store the TR data in the cloud server 140 and the IPFS 150.

[00115] In an embodiment, when the TR data includes image data having a predetermined size or more, the management server 120 may determine to divide and store the TR data in the cloud server 140 and the IPFS 150.

[00116] In an embodiment, when the TR data does not include image data having a predetermined size or more, the management server 120 may determine to store the TR data in the cloud server 140.

[00117] According to an embodiment, in operation 409, the management server 120 may transmit a signal for requesting to store TR data to the cloud server 140.

[00118] In an embodiment, when the management server 120 determines to store the TR

data only in the cloud server 140, the management server 120 may transmit a first storage request for requesting to store the TR data in the cloud server 140 to the cloud server 140. The first storage request may include TR data to be stored.

[00119] According to an embodiment, in operation 411, the management server 120 may transmit a signal for requesting to store TR data to the IPFS 150.

[00120] In an embodiment, when the management server 120 determines to divide and store the TR data in the cloud server 140 and the IPFS 150, the management server 120 may transmit, to the IPFS, a second storage request for requesting the cloud server 140 to store at least part (e.g., additionally attached image data or video data) of the TR data. In this case, the management server 120 may request to store the remaining part of the TR data in the cloud server 140.

[00121] In an embodiment, the cloud server 140 may store the TR data received in operation 409.

[00122] In an embodiment, the IPFS 150 may store the TR data received in operation 411.

[00123] According to an embodiment, in operation 413, the IPFS 150 may transmit a hash value for the stored TR data to the management server 120. When the TR data is stored in the IPFS, the TR data is divided and stored. Thus, a hash value for the TR data may be generated and transmitted to the management server 120 to identify the stored node.

[00124] In an embodiment, the management server 120 may generate a table related to the location where the TR data is stored, based on the received hash value. For example, the table related to the location where the TR data is stored may be generated in the form shown in Table 2 described above.

[00125] According to an embodiment, in operation 415, the management server 120 may transmit TR data not including the hash value to the cloud server 140.

[00126] Operations 403 and 405 of FIG. 4 may be omitted. When the management server 120 determines to store the TR data only in the cloud server 140, operations 411, 413, and 415 may be omitted. Further, when the management server 120 determines to divide and store the TR data in the cloud server 140 and the IPFS, operation 409 may be omitted.

[00127] FIG. 5 is a signaling flowchart for generating a curriculum vitae (CV) according to an embodiment. In the description of FIG. 5, parts described in connection with FIGS. 1, 2, 3, and 4 may be omitted. The operation illustrated in FIG. 5 illustrates a signaling flow performed when the user requests a CV, and the process of storing TR data according to FIG. 4 may be performed before the CV request. The operation of the management server 120 of FIG. 5 may include the operation of the server device of FIG. 3. Although only one client device 110 is illustrated in FIG. 5, this is for convenience of description, and there may be a plurality of client devices communicating with the management server 120.

[00128] According to an embodiment, in operation 501, the client device 110 may request a curriculum vitae (CV) of the user from the management server 120. The CV may mean the user's history information generated based on the user's TR data.

[00129] In an embodiment, the CV request transmitted from the client device 110 to the server device 120 may include filtering information (e.g., reception of only TR data about the task performed during a specific period, reception of only TR data about the task performed at a specific place, reception of only TR data about the task belonging to a specific category, or reception of only TR data including feedback of a predetermined criterion or more) that allows the user to extract and obtain only desired TR data among the plurality of TR data stored in the cloud server 140 or IPFS 150.

[00130] According to an embodiment, in operation 503, in response to receiving the CV request from the client device 110, the management server 120 may transmit a signal for requesting

a key value of the client device 110 to the IAM server 130.

[00131] According to an embodiment, in operation 505, the management server 120 may receive a key value of the client device 110 from the IAM server 130.

[00132] According to an embodiment, in operation 507, the management server 120 may request TR data from the cloud server 140.

[00133] In an embodiment, the management server 120 may request at least one piece of TR data to be included in the CV from the cloud server based on the key value of the user.

[00134] In an embodiment, the TR data request may refer to a signal for requesting the client device 110 to transmit at least one piece of TR data among pieces of TR data related to tasks performed by the user, stored in the cloud server and the IPFS to generate a desired CV.

[00135] In an embodiment, the at least one piece of TR data may be selected based on filtering information included in the CV request.

[00136] According to an embodiment, in operation 509, the management server 120 may receive at least one piece of TR data requested from the cloud server 140.

[00137] According to an embodiment, in operation 511, the management server 120 may determine whether at least one piece of TR data received from the cloud server 140 is stored in the IPFS.

[00138] In an embodiment, the management server 120 may determine whether at least one piece of TR data is stored in the IPFS, based on the table of TR data generated and managed by the management server 120. For example, when the hash value is included in the corresponding TR data area in the table about TR data, it may be determined that the at least one piece of TR data is stored in the IPFS.

[00139] According to an embodiment, in operation 513, the management server 120 may request TR data from the IPFS.

[00140] According to an embodiment, in operation 513, the management server 120 may receive the TR data requested from the IPFS.

[00141] In an embodiment, operations 513 and 515 are operations performed when there is data stored in the IPFS 150 among the at least one piece of TR data requested by the management server 120 from the cloud server 140, and operations 513 and 515 may be omitted when there is no data stored in the IPFS 150 among the at least one piece of TR data.

[00142] According to an embodiment, in operation 517, the management server 120 may generate a CV based on at least one piece of data received from the cloud server and TR data received from the IPFS 150.

[00143] In an embodiment, the management server 120 may generate a CV by combining TR data received from the cloud server 140 and the IPFS 150.

[00144] In an embodiment, the management server 120 may generate a CV by combining TR data received from the cloud server 140 and the IPFS 150 with information about the user profile received from the client device 110. Operation 517 may be described below in detail with reference to FIG. 6.

[00145] According to an embodiment, in operation 519, the management server 120 may transmit the generated CV to the client device 110.

[00146] FIG. 6 illustrates an example of CV generation according to an embodiment. What is illustrated in FIG. 6 is merely an example, and part thereof may be omitted or other features may be added.

[00147] The management server 120 according to an embodiment may generate the CV 630 based on a plurality of pieces of TR data 610 received from the cloud server 140 and the IPFS 150.

[00148] In an embodiment, each of the TR data (e.g., 610-1, 610-2, 610-3, ...610-N) may

include a category, a sub-category, a place to perform a task, a time to perform a task, and feedback information.

[00149] In an embodiment, the management server 120 may combine a plurality of pieces of TR data (e.g., the TR data 610-1, the TR data 610-2, the TR data 610-3, ...TR data 610-N) to generate combined TR data 620. For example, referring to FIG. 6, the combined TR data 620 may include “restaurant” and “cleaning” as the categories of the task performed by the user, and “serving”, “delivery”, and “home clean” as the sub-categories. Further, as an example, the combined TR data 620 may also include information indicating that the user has performed a task in “Gangnam-Gu” and “Yangcheon-Gu”. For example, the combined data 620 may include information about the task execution time (e.g., 140 hours for delivery and 200 hours for serving). Further, as an example, the combined TR data 620 may include feedback information about the task performed by the user (e.g., “excellent” for delivery and “good” for serving).

[00150] In an embodiment, the CV 630 may include the user's personal information 632, information 634 about the certification of the task performed, information 636 about the user’s educational background, and information 638 about the experience of the performed task. The information 638 about the experience of the performed task may include at least a portion of the combined TR data.

[00151] FIG. 7 is a signaling flowchart for authenticating TR data according to an embodiment. In the description of FIG. 7, parts described in connection with FIGS. 1 to 6 may be omitted. The operation illustrated in FIG. 7 illustrates a signaling flow performed when the user requests authentication of TR data, and the process of storing TR data according to FIG. 4 may be performed before the CV request. The operation of the management server 120 of FIG. 7 may include the operation of the server device of FIG. 3. Although only one client device 110 is illustrated in FIG. 7, this is for convenience of description, and there may be a plurality of client

devices communicating with the management server 120.

[00152] According to an embodiment, in operation 701, the client device 110 may transmit a TR data authentication request to the management server 120.

[00153] According to an embodiment, in operation 703, the management server 120 may receive a key value of the client device 110 from the IAM server 130.

[00154] According to an embodiment, in operation 705, the management server 120 may receive a key value of the client device 110 from the IAM server 130.

[00155] According to an embodiment, in operation 707, the management server 120 may transmit an authentication request for TR data to the cloud server 140.

[00156] According to an embodiment, in operation 709, the cloud server 140 may request the authentication server 141 to perform authentication of the corresponding TR data.

[00157] According to an embodiment, in operation 711, the authentication server 141 may request the external server 160 to authenticate the TR data. Although only one external server 160 is illustrated in FIG. 7 for convenience of description, there may be a plurality of external servers performing authentication of TR data, and the authentication server 141 may communicate with the plurality of external servers.

[00158] In an embodiment, the authentication server 141 may identify the external server 160 based on the TR data and the type of the accredited authentication to be performed.

[00159] According to an embodiment, in operation 713, the authentication server 141 may receive authentication information about TR data from the external server 160.

[00160] According to an embodiment, in operation 715, the cloud server 140 may receive authentication information about TR data from the authentication server 141.

[00161] In an embodiment, the cloud server 140 may store the authentication information about the TR data received from the authentication server 141 together with the TR data.

[00162] According to an embodiment, in operation 717, the cloud server 140 may transmit authentication information about the TR data to the management server 120.

[00163] According to an embodiment, in operation 719, the management server 120 may transmit authentication information about the TR data received from the cloud server 140 to the client device 110.

[00164] FIG. 8 is a signaling flowchart for charging according to an embodiment.

[00165] According to an embodiment, in operation 801, the client device 110 may transmit TR data to the management server 120.

[00166] According to an embodiment, in operation 803, the management server 120 may request the cloud server 140 to store TR data.

[00167] In an embodiment, operations 801 and 803 may correspond to the operations of FIG. 3.

[00168] According to an embodiment, in operation 805, the management server 120 may request the cloud server 140 to identify the used gas.

[00169] According to an embodiment, in operation 807, the cloud server 140 may calculate the gas used to store the corresponding TR data.

[00170] According to an embodiment, in operation 809, the cloud server 140 may transmit, to the management server 120, information about how much gas is used, based on the calculated result.

[00171] According to an embodiment, in operation 811, the management server 120 may transmit information about how much gas is used to store the corresponding TR data to the billing server 170.

[00172] According to an embodiment, in operation 815, the billing server 170 may store information about how much gas is used to store the corresponding TR data and a price thereof.

[00173] According to an embodiment, in operation 813, the client device 110 may request charging from the management server 120.

[00174] According to an embodiment, in operation 817, the management server 120 may request the billing server 170 to identify the price.

[00175] According to an embodiment, in operation 819, the management server 120 may receive price information from the billing server 170.

[00176] According to an embodiment, in operation 821, the management server 120 may transmit information about the charged amount to the client device 110.

[00177] A method for operating a server device for generating and managing curriculum vitaes (CVs) of a plurality of client devices according to an embodiment of the disclosure may comprise receiving, from at least one client device, task receipt (TR) data including information about a task performed by a user of the at least one client device, determining whether the TR data includes image data having a predetermined size or more, when it is determined that the TR data does not include the image data having the predetermined size or more, transmitting a first storage request including the TR data to a cloud server storing the TR data of the at least one client device, and when it is determined that the TR data includes image data having the predetermined size or more, transmitting a second storage request including at least a portion of the TR data to an interplanetary file system (IPFS) connected to the server device.

[00178] In an embodiment, the at least portion of the TR data may include the image data having the predetermined size or more.

[00179] In an embodiment, the method may further comprise transmitting a remaining portion of the TR data except for the at least the portion to the cloud server in response to transmitting the second storage request to the IPFS.

[00180] In an embodiment, the method may further comprise generating a TR table

including information about a location where the TR data is stored in response to determining whether the TR data includes the image data having the predetermined size or more.

[00181] In an embodiment, the method may further comprise receiving a hash value of the TR data from the IPFS in response to transmitting the second storage request. The TR table may include the hash value of the TR data.

[00182] In an embodiment, the method may further comprise requesting an identifier of the at least one client device from an identity and access management (IAM) server based on the TR data in response to receiving the TR data from the at least one client device, receiving the identifier of the at least one client device from the IAM server, and transmitting the identifier of the at least one client device and the TR data to the cloud server or the IPFS.

[00183] In an embodiment, the TR data may further include personal information about the user of the at least one client device, information about a certificate owned by the user, and educational background information about the user.

[00184] In an embodiment, the method may further comprise receiving a CV transmission request for requesting to transmit a CV of the user of the at least one client device from the at least one client device and transmitting a TR transmission request for requesting one or more pieces of TR data of the user to at least one of the cloud server and the IPFS, based on the information about the location where the TR data is stored included in the TR table. The CV transmission request may include filtering information for filtering the one or more pieces of TR data.

[00185] In an embodiment, the method may further comprise receiving at least one piece of TR data of the user from at least one of the cloud server and the IPFS, generating the CV of the user based on the at least one piece of TR data and the filtering information, and transmitting the generated CV of the user to the at least one client device.

[00186] In an embodiment, the method may further comprise receiving an authentication

request for the TR data from the at least one client device, transmitting an authentication execution request requesting to perform authentication of the TR data to the cloud server, in response to receiving the authentication request for the TR data, and receiving an authentication response to the authentication execution request from the cloud server.

[00187] In an embodiment, the method may further comprise transmitting a billing information request for requesting to transmit billing information about the TR data to the cloud server and receiving a billing information response including the billing information about the TR data from the cloud server.

[00188] In an embodiment, the method may further comprise updating the TR table when the server has transmitted the same image data as the image data having the predetermined size or more to the IPFS before receiving the TR data.

[00189] A server device for generating and managing CVs of a plurality of client devices according to an embodiment of the disclosure may comprise a communication unit, a memory, and at least one processor operably connected with the communication unit and the memory. The at least one processor may receive, from at least one client device, task receipt (TR) data including information about a task performed by a user of the at least one client device, determines whether the TR data includes image data having a predetermined size or more, when it is determined that the TR data does not include the image data having the predetermined size or more, transmit, through the communication unit, a first storage request including the TR data to a cloud server storing the TR data of the at least one client device, and when it is determined that the TR data includes image data having the predetermined size or more, transmit, through the communication unit, a second storage request including at least a portion of the TR data to an interplanetary file system (IPFS) connected to the server device.

[00190] In an embodiment, the at least portion of the TR data may include the image data

having the predetermined size or more.

[00191] In an embodiment, the at least one processor may transmit a remaining portion of the TR data except for the at least the portion to the cloud server in response to transmitting the second storage request to the IPFS.

[00192] In an embodiment, the at least one processor may generate a TR table including information about a location where the TR data is stored in response to determining whether the TR data includes the image data having the predetermined size or more.

[00193] In an embodiment, the at least one processor may receive a hash value of the TR data from the IPFS in response to transmitting the second storage request. The TR table may include the hash value of the TR data.

[00194] In an embodiment, the at least one processor may request an identifier of the at least one client device from an identity and access management (IAM) server based on the TR data in response to receiving the TR data from the at least one client device, receive the identifier of the at least one client device from the IAM server, and transmit the identifier of the at least one client device and the TR data to the cloud server or the IPFS.

[00195] In an embodiment, the TR data may further include personal information about the user of the at least one client device, information about a certificate owned by the user, and educational background information about the user.

[00196] In an embodiment, the at least one processor may receive a CV transmission request for requesting to transmit a CV of the user of the at least one client device from the at least one client device and transmit a TR transmission request for requesting one or more pieces of TR data of the user to at least one of the cloud server and the IPFS, based on the information about the location where the TR data is stored included in the TR table. The CV transmission request may include filtering information for filtering the one or more pieces of TR data.

[00197] The electronic device according to various embodiments of the disclosure may be one of various types of electronic devices. The electronic devices may include, for example, a display device, a portable communication device (e.g., a smartphone), a computer device, a portable multimedia device, a portable medical device, a camera, a wearable device, or a home appliance. According to an embodiment of the disclosure, the electronic devices are not limited to those described above.

[00198] It should be appreciated that various embodiments of the disclosure and the terms used therein are not intended to limit the technological features set forth herein to particular embodiments and include various changes, equivalents, or replacements for a corresponding embodiment. As used herein, the singular forms “a,” “an,” and “the” are intended to include the plural forms as well, unless the context clearly indicates otherwise. As used herein, the term 'and/or’ should be understood as encompassing any and all possible combinations by one or more of the enumerated items. As used herein, the terms “include,” “have,” and “comprise” are used merely to designate the presence of the feature, component, part, or a combination thereof described herein, but use of the term does not exclude the likelihood of presence or adding one or more other features, components, parts, or combinations thereof. As used herein, each of such phrases as "A or B," "at least one of A and B," “at least one of A or B,” "A, B, or C," "at least one of A, B, and C," and “at least one of A, B, or C,” may include all possible combinations of the items enumerated together in a corresponding one of the phrases. As used herein, such terms as "1st" and "2nd," or “first” and "second" may be used to simply distinguish a corresponding component from another, and does not limit the components in other aspect (e.g., importance or order).

[00199] As used herein, the term “part” or "module" may include a unit implemented in hardware, software, or firmware, and may interchangeably be used with other terms, for example, "logic," "logic block," "part," or "circuitry". A part or module may be a single integral component,

or a minimum unit or part thereof, adapted to perform one or more functions. For example, according to an embodiment, 'part' or 'module' may be implemented in a form of an application-specific integrated circuit (ASIC).

[00200] As used in various embodiments of the disclosure, the term "if" may be interpreted as "when," "upon," "in response to determining," or "in response to detecting," depending on the context. Similarly, "if A is determined" or "if A is detected" may be interpreted as "upon determining A" or "in response to determining A", or "upon detecting A" or "in response to detecting A", depending on the context.

[00201] The program executed by the electronic device 110 and remote control device 120 described herein may be implemented as a hardware component, a software component, and/or a combination thereof. The program may be executed by any system capable of executing computer readable instructions.

[00202] The software may include computer programs, codes, instructions, or combinations of one or more thereof and may configure the processing device as it is operated as desired or may instruct the processing device independently or collectively. The software may be implemented as a computer program including instructions stored in computer-readable storage media. The computer-readable storage media may include, e.g., magnetic storage media (e.g., read-only memory (ROM), random-access memory (RAM), floppy disk, hard disk, etc.) and an optically readable media (e.g., CD-ROM or digital versatile disc (DVD). Further, the computer-readable storage media may be distributed to computer systems connected via a network, and computer-readable codes may be stored and executed in a distributed manner. The computer program may be distributed (e.g., downloaded or uploaded) via an application store (e.g., Play Store™), directly between two UEs (e.g., smartphones), or online. If distributed online, at least part of the computer program product may be temporarily generated or at least temporarily stored

in the machine-readable storage medium, such as memory of the manufacturer's server, a server of the application store, or a relay server.

[00203] According to various embodiments, each component (e.g., a module or a program) of the above-described components may include a single entity or multiple entities. Some of the plurality of entities may be separately disposed in different components. According to various embodiments, one or more of the above-described components may be omitted, or one or more other components may be added. Alternatively or additionally, a plurality of components (e.g., modules or programs) may be integrated into a single component. In such a case, according to various embodiments, the integrated component may still perform one or more functions of each of the plurality of components in the same or similar manner as they are performed by a corresponding one of the plurality of components before the integration. According to various embodiments, operations performed by the module, the program, or another component may be carried out sequentially, in parallel, repeatedly, or heuristically, or one or more of the operations may be executed in a different order or omitted, or one or more other operations may be added.

WHAT IS CLAIMED:

1. A method for operating a server device for generating and managing curriculum vitaes (CVs) of a plurality of client devices, the method comprising:

receiving, from at least one client device, task receipt (TR) data including information about a task performed by a user of the at least one client device;

determining whether the TR data includes file data having a predetermined size or more;

when it is determined that the TR data does not include the file data having the predetermined size or more, transmitting a first storage request including the TR data to a blockchain-based cloud server storing the TR data of the at least one client device;

when it is determined that the TR data includes file data having the predetermined size or more:

identifying that the file data is not the same as other file data previously stored; and

transmitting a second storage request including the file data to an interplanetary file system (IPFS) connected to the server device,

wherein the file data includes data related to at least one of an image, a video, and a sound.

2. The method of claim 1, further comprising:

extracting text information from the file data in response to identifying that the file data is not the same as the other previously stored file data;

determining whether the user’s personal identification information is included in the file data based on the text information;

when it is determined that the file data does not include the user’s personal identification information, transmitting the second storage request including the file data to the IPFS connected

to the server device; and

when it is determined that the file data includes the user's personal identification information, blurring a portion related to the personal identification information.

3. The method of claim 1, further comprising transmitting remaining data of the TR data except for the file data to the cloud server in response to transmitting the second storage request to the IPFS.

4. The method of claim 3, further comprising generating a TR table including information about a location where the TR data is stored in response to determining whether the TR data includes file data having the predetermined size or more.

5. The method of claim 4, further comprising receiving a hash value of the TR data from the IPFS in response to transmitting the second storage request,

wherein the TR table includes the hash value of the TR data.

6. The method of claim 1, further comprising:

requesting an identifier of the at least one client device from an identity and access management (IAM) server based on the TR data in response to receiving the TR data from the at least one client device;

receiving the identifier of the at least one client device from the IAM server; and

transmitting the identifier of the at least one client device and the TR data to the cloud server or the IPFS.

7. The method of claim 1, wherein the TR data further includes personal information about the user of the at least one client device, information about a certificate owned by the user, and educational background information about the user.

8. The method of claim 4, further comprising:

receiving a CV transmission request for requesting to transmit a CV of the user of the at least one client device from the at least one client device; and

transmitting a TR transmission request for requesting one or more pieces of TR data of the user to at least one of the cloud server and the IPFS, based on the information about the location where the TR data is stored included in the TR table,

wherein the CV transmission request includes filtering information for filtering the one or more pieces of TR data.

9. The method of claim 8, further comprising:

receiving at least one piece of TR data of the user from at least one of the cloud server and the IPFS;

generating the CV of the user based on the at least one piece of TR data and the filtering information; and

transmitting the generated CV of the user to the at least one client device.

10. The method of claim 1, further comprising:

receiving an authentication request for the TR data from the at least one client device;

transmitting an authentication execution request requesting to perform authentication of the TR data to the cloud server, in response to receiving the authentication request for the TR data;

and

receiving an authentication response to the authentication execution request from the cloud server.

11. The method of claim 1, further comprising:

transmitting a billing information request for requesting to transmit billing information about the TR data to the cloud server; and

receiving a billing information response including the billing information about the TR data from the cloud server.

12. The method of claim 4, further comprising updating the TR table when the server has transmitted the same file data as the file data having the predetermined size or more to the IPFS before receiving the TR data.

13. A server device for generating and managing CVs of a plurality of client devices, comprising:

a communication unit;

a memory; and

at least one processor operably connected with the communication unit and the memory, wherein the at least one processor:

receives, from at least one client device through the communication unit, task receipt (TR) data including information about a task performed by a user of the at least one client device;

determines whether the TR data includes file data having a predetermined size or more;

when it is determined that the TR data does not include the file data having the

predetermined size or more, transmits, through the communication unit, a first storage request including the TR data to a blockchain-based cloud server storing the TR data of the at least one client device;

when it is determined that the TR data includes file data having the predetermined size or more:

identifies that the file data is not the same as other file data previously stored; and

transmits, through the communication unit, a second storage request including the file data to an interplanetary file system (IPFS) connected to the server device,

wherein the file data includes data related to at least one of an image, a video, and a sound.

14. The server device of claim 13, wherein the at least one processor:

extracts text information from the file data in response to identifying that the file data is not the same as the other previously stored file data;

determines whether the user’s personal identification information is included in the file data based on the text information;

when it is determined that the file data does not include the user’s personal identification information, transmits the second storage request including the file data to the IPFS connected to the server device; and

when it is determined that the file data includes the user's personal identification information, blurs a portion related to the personal identification information.

15. The server device of claim 13, wherein the at least one processor transmits remaining data of the TR data except for the file data to the cloud server in response to transmitting the second storage request to the IPFS.

16. The server device of claim 15, wherein the at least one processor generates a TR table including information about a location where the TR data is stored in response to determining whether the TR data includes file data having the predetermined size or more.

17. The server device of claim 16, wherein the at least one processor receives a hash value of the TR data from the IPFS in response to transmitting the second storage request,

wherein the TR table includes the hash value of the TR data.

18. The server device of claim 13, wherein the at least one processor:

requests an identifier of the at least one client device from an identity and access management (IAM) server based on the TR data in response to receiving the TR data from the at least one client device;

receives the identifier of the at least one client device from the IAM server; and

transmits the identifier of the at least one client device and the TR data to the cloud server or the IPFS.

19. The server device of claim 13, wherein the TR data further includes personal information about the user of the at least one client device, information about a certificate owned by the user, and educational background information about the user.

20. The server device of claim 16, wherein the at least one processor:

receives a CV transmission request for requesting to transmit a CV of the user of the at least one client device from the at least one client device; and

transmits a TR transmission request for requesting one or more pieces of TR data of the user to at least one of the cloud server and the IPFS, based on the information about the location where the TR data is stored included in the TR table,

wherein the CV transmission request includes filtering information for filtering the one or more pieces of TR data.