United States Patent	12387176
Kind Code	B1
Date of Patent	August 12, 2025
Inventor(s)	Bradford; Ramsie

System and method for facilitating temporary employment in secure environments

Abstract

A system and method for facilitating temporary employment in secure environments includes a computer server in communication with an open, but prequalified, employee base and an open employer base. The computer server is adapted to economically and efficiently match an employer in need with a readily available temporary employee selected from a pool of prequalified candidate employees. Additionally, the computer server is adapter to authenticate the identity of the selected candidate on arrival at the employer location.

Inventors:	**Bradford; Ramsie (San Antonio, TX)**
Applicant:	**Bradford; Ramsie** (San Antonio, TX)
Family ID:	**1000004841674**
Appl. No.:	**16/874598**
Filed:	**May 14, 2020**

Publication Classification

Int. Cl.: **G06Q10/1053** (20230101); **G06F21/32** (20130101); **G07C9/37** (20200101)

U.S. Cl.:

CPC   **G06Q10/1053** (20130101); **G06F21/32** (20130101); **G07C9/37** (20200101);

Field of Classification Search

CPC: G06Q (10/1053); G06F (21/32); G07C (9/37)

References Cited

U.S. PATENT DOCUMENTS

Patent No.	Issued Date	Patentee Name	U.S. Cl.	CPC
5884270	12/1998	Walker	379/93.12	H04L 9/3271
8145575	12/2011	Johnson	705/320	G06Q 10/1053
8595148	12/2012	Borgen	705/321	G06Q 10/105
8682806	12/2013	Cate	705/320	G06Q 10/1053
8704682	12/2013	Chau	340/995.13	G01C 21/3453
9043799	12/2014	Martin	718/104	G06F 9/46
9064285	12/2014	Nathoo	N/A	G06Q 40/125
9569416	12/2016	Martin	N/A	G06F 9/451
9832193	12/2016	Amaladoss	N/A	H04L 67/14
11086845	12/2020	Shah	N/A	G06F 16/219
11341222	12/2021	Caffey	N/A	H04W 12/06
2002/0123921	12/2001	Frazier	705/7.14	G06Q 10/063112
2002/0156674	12/2001	Okamoto	705/321	G06Q 10/1053
2003/0050816	12/2002	Givens	705/7.14	G06Q 10/063112
2003/0163709	12/2002	Milgramm	713/186	G07C 9/37
2003/0204425	12/2002	Kennedy	715/825	G06Q 10/10
2004/0015371	12/2003	Thomas	705/321	G06Q 10/10
2004/0024694	12/2003	Lawrence	705/38	G06Q 40/025
2004/0044538	12/2003	Mauzy	705/321	G06Q 10/1053
2004/0107112	12/2003	Cotter	705/321	G06Q 30/02
2004/0143469	12/2003	Lutz	705/321	G06Q 10/10
2004/0177095	12/2003	West	N/A	G06Q 99/00
2004/0268125	12/2003	Clark	726/4	G06F 21/6218
2005/0027983	12/2004	Klawon	713/168	G06F 21/31
2005/0206501	12/2004	Farhat	340/5.82	G07C 9/257
2005/0240431	12/2004	Cotter	705/321	G06Q 30/02
2005/0256744	12/2004	Rohde	705/2	G06Q 10/00
2006/0018520	12/2005	Holloran	382/116	G06Q 10/10
2006/0026069	12/2005	Mazurkiewicz	705/14.42	G06Q 30/02
2006/0229896	12/2005	Rosen	705/321	G06Q 10/1053
2007/0078793	12/2006	Dearing	705/401	G06Q 10/08
2007/0129966	12/2006	Walker	705/321	G06Q 10/1053
2008/0183486	12/2007	Baumgarten	705/321	G06Q 30/02
2008/0183600	12/2007	Bowser	705/28	G06Q 30/0283
2009/0049095	12/2008	Simon	N/A	G06Q 10/06
2010/0046806	12/2009	Baughman	345/619	G06F 21/316
2011/0010276	12/2010	Bowser	705/29	G06Q 10/0875
2011/0112977	12/2010	Baumgarten	705/321	G06Q 10/00
2011/0208664	12/2010	Rahman	705/347	G06Q 30/0282
2011/0313941	12/2010	Rahman	705/321	G06Q 10/1053
2012/0023030	12/2011	Jeffries	705/319	G06Q 10/1053
2013/0013489	12/2012	Kremen	705/38	G06Q 50/01
2013/0024105	12/2012	Thomas	701/410	H04W 4/023
2013/0097093	12/2012	Kolber	705/321	G06Q 10/1053
2013/0104197	12/2012	Nandakumar	726/4	G06F 21/40

2014/0114871	12/2013	Jain	705/321	G06Q 10/1053
2014/0152424	12/2013	Steven	340/5.82	G07C 9/37
2014/0164271	12/2013	Forman	705/321	G06Q 10/1053
2014/0266604	12/2013	Masood	340/5.83	H04N 23/20
2014/0294257	12/2013	Tussy	382/118	G06Q 10/00
2014/0357295	12/2013	Skomra	455/456.1	G07C 5/008
2015/0095077	12/2014	Ruffolo	705/32	G06Q 40/125
2015/0112842	12/2014	Sieger	705/26.63	G06Q 30/0627
2015/0213413	12/2014	Faron	705/321	G06Q 10/1053
2015/0233733	12/2014	Parks, III	340/870.02	G06Q 10/10
2015/0278960	12/2014	Moore	707/769	H04L 67/306
2017/0004481	12/2016	Slusser	N/A	G06Q 20/12
2017/0069148	12/2016	Gilbertson	N/A	G07C 9/257
2017/0147984	12/2016	Zoia	N/A	G06F 16/9535
2017/0154312	12/2016	Wilson	N/A	G06Q 10/1053
2017/0228697	12/2016	Brdiczka	N/A	G06Q 10/1053
2017/0301161	12/2016	Sugishita	N/A	G06F 21/32
2018/0241751	12/2017	Kruse	N/A	H04L 63/102
2018/0308061	12/2017	Al Jadda	N/A	G06Q 10/10
2018/0330302	12/2017	Peterson	N/A	G06Q 10/06398
2018/0349854	12/2017	Wigand	N/A	G06F 3/04886
2018/0357644	12/2017	Tabe	N/A	G06V 40/1365
2019/0027254	12/2018	Li	N/A	G16H 50/30
2019/0079994	12/2018	Ma	N/A	G06F 16/2379
2019/0102528	12/2018	Beacham	N/A	G06V 40/171
2019/0102743	12/2018	Cirrincione	N/A	G06F 16/29
2019/0138996	12/2018	Salvi	N/A	G06F 40/284
2019/0246083	12/2018	Tripathi	N/A	G06T 3/0093
2019/0272487	12/2018	Theus	N/A	G06Q 10/06311
2019/0272640	12/2018	Sugahara	N/A	G06N 20/00
2019/0295040	12/2018	Clines	N/A	G06Q 10/1053
2019/0332754	12/2018	Andersen	N/A	G06F 21/35
2020/0005416	12/2019	Wade	N/A	G06Q 10/105
2020/0143612	12/2019	Nakao	N/A	G07C 9/38
2020/0202304	12/2019	Maltese	N/A	G06Q 10/1053
2020/0327507	12/2019	Paschalidis	N/A	G06Q 10/1091
2020/0349374	12/2019	Morzhakov	N/A	G06V 10/993
2020/0374287	12/2019	Bowie	N/A	H04W 12/06
2020/0387872	12/2019	Zhou	N/A	G06Q 50/01
2021/0005317	12/2020	Neumann	N/A	G16H 50/20
2021/0326184	12/2020	Muraleedharan	N/A	G06F 21/53

Primary Examiner: Moorthy; Aravind K

Background/Summary

FIELD OF THE INVENTION
(1) The present invention relates to employment services. More particularly, the invention relates to

a system and method for facilitating temporary employment in secure environments, whereby an employer in need may be economically and efficiently, and, moreover, securely, matched with a readily available temporary employee selected from a pool of prequalified candidate employees.

BACKGROUND OF THE INVENTION

(2) It is projected that by the year 2030 there will be a 55% increase in the U.S. population aged 65 years or older. Notably, this demographic consumes double or more healthcare services than does younger patients, yet there is already a healthcare workforce shortage with vacancy rates up to 20%. With the increase in the aging population, this shortage is only expected to worsen. Although many factors contribute to the shortage, one factor in particular is burnout among healthcare professionals due to long term exhaustion and diminished interest in the work context. Unfortunately, the end result is further decrease in wellbeing among healthcare staff members and, ultimately, a decrease in quality of care provided.

(3) Applicant has discovered that burnout in general can be retarded by enabling workers to have more control over their work schedules and time off. This flexibility, however, has heretofore not been available to the healthcare industry. In addition to the persistent and growing problem of staff shortages, the use of temporary employees—especially on short term notice or a per shift basis is made virtually impossible by the need for verifiably credentialed employees. As a result, there is a strong need to allow an employer in need to be economically and efficiently, and, moreover, securely, matched with a readily available temporary employee selected from a pool of prequalified candidate employees.

(4) It is therefore an overriding object of the present invention to provide a system and method for facilitating temporary employment in secure environments, whereby such credentialed workers as, for example, include physicians, physician assistants, medical radiological technologists, non-certified radiologic technicians, respiratory care practitioners, medical physicists, perfusionists, pharmacists, pharmacy technicians, and the like, may readily participate in the temporary employee market.

SUMMARY OF THE INVENTION

(5) In accordance with the foregoing objects, the present invention—a system and method for facilitating temporary employment in secure environments—generally comprises a computer server located at a site associated with a facilitator of temporary employment, and which is adapted to utilize various communication channels to bring together a prequalified pool of candidate employees and set of employers in particular need, from time-to-time of such temporary employees as possess credentials for which the employees are prequalified. Each candidate employee is required to have only a minimal contractual relationship with the facilitator, but must provide proof of professional credentials, including training and, as may be required, professional or other required licensing or the like. Additionally, an employee user is also required to submit to the collection by the facilitator of one or more biometric markers.

(6) In a critical aspect of the present invention, the system and method for facilitating temporary employment enables the employer to positively authenticate the identity of a selected employee upon arrival of that employee at the employer's location utilizing collected biometric markers. To this end, the computer server is adapted to receive biometric data remotely obtained by the employer, to compare the received biometric data with biometric data previously obtained and validated by the facilitator, and to then communicate authentication or rejection to the employer.

(7) Finally, many other features, objects and advantages of the present invention will be apparent to those of ordinary skill in the relevant arts, especially in light of the foregoing discussions and the following drawings, exemplary detailed description and appended claims.

Description

BRIEF DESCRIPTION OF THE DRAWINGS

(1) Although the scope of the present invention is much broader than any particular embodiment, a detailed description of the preferred embodiment follows together with illustrative figures, wherein like reference numerals refer to like components, and wherein:

(2) FIG. **1** shows, in a deployment diagram, a preferred implementation of the system for facilitating temporary employment in secure environments of the present invention; and

(3) FIG. **2** shows, in a sequence diagram, various communications as may be made in a preferred method of use of the system for facilitating temporary employment in secure environments of FIG. **1**.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

(4) Although those of ordinary skill in the art will readily recognize many alternative embodiments, especially in light of the illustrations provided herein, this detailed description is exemplary of the preferred embodiment of the present invention, the scope of which is limited only by the claims appended hereto.

(5) As shown in the figures, and in FIG. **1** in particular, the distributed system **10** for facilitating temporary employment in secure environments, as implemented in accordance with the present invention, utilizes a computer server **21** located at a site associated with a facilitator **20** of temporary employment to bring together a prequalified pool of candidate employees **12** and set of employers **13** in particular need, from time-to-time of such temporary employees as possess credentials for which the employees **12** are prequalified, as set forth herein. For purposes of this exemplary disclosure, the employees **12** and the employers **13** are collectively referred to as users **11** of the distributed system **10**.

(6) In accordance with at least the most preferred implementations of the present invention, each candidate employee **12** is required to have only a minimal contractual relationship with the facilitator **20**, which typically is the owner of the distributed system and related methods. In particular, a candidate employee user **12** of the implemented system **10** and methods preferably need not be in an employment type relationship with the facilitator **20**. On the other hand, however, provision of the services requires that a candidate employee **12** has provided proof of professional credentials, including training and, as may be required, professional or other required licensing or the like, as will be better understood further herein. As also will be better understood herein, an employee user **12** of the implemented system **10** and methods is also required to submit to the collection by the facilitator **20** of one or more biometric markers for use in connection with the distributed system **10** of the present invention.

(7) Likewise, participating employers **13** in need of credentialed temporary employees **12** need only meet minimal contractual requirements for effective utilization of the distributed system **10** of the present invention. In particular, as will be better understood further herein, each participating employer user **13** will typically be required to receive and hold confidential information regarding an employee **12**, which may include medical records or like patient protected information, and in all cases will include at least one potentially legally protected biometric marker for each utilized employee **12**. Additionally, each participating employer user **13** will typically need to be bound for payment of services, and may also be required, if desired by a particular facilitator **20**, to execute appropriate agreements regarding confidentiality of employee lists and the like. Finally, and as will be described in greater detail further herein, each employer **13** will be required to maintain specified computing hardware and software, as will be necessary, in accordance with the present invention, for authentication of a selected employee's identity.

(8) In any case, as particularly shown in FIG. **1**, an exemplary computer server **21** as suitable for implementation, in accordance with the present invention, of the distributed system **10** for facilitating temporary employment, will host a service manager program **22** within an otherwise conventional execution environment **23**. In order to efficiently and securely store and handle the

various data required by the service manager program **22** in the provision of the services of the present invention, the server **21** also preferably hosts a database management system **24** or, in the alternative, is securely associated with a database management system **24** hosted, for example, on a dedicated database server. While, in light of this exemplary description, other data organization schemes will be readily within the ordinary skill in the relevant arts, a convenient and suitable model includes the provision, within the database management system **24**, of a customer database **25** optimized for storing most information regarding individual employees **12** and employers **13**, including their relationships with each other and the facilitator, qualifications, requirements, and the like. On the hand, more specialized information, as may require elevated security privileges and/or particular usage of particularly optimized filesystems or database field, may be stored in separate, but associated databases. In the exemplary implementation of the present invention as shown and described, a template database **26** is provided for maintaining biometric interchange data, and an image database **27** is provided for storing a preferably high quality facial image for each prequalified employee **12**. Finally, a user gateway **28**, such as an Internet connection and associated security appliances and the like, is implemented in connection with the computer server **21**, and is made available for the use of the service manager program **22** in communicating with employee users **12**, employer users **13**, and, as will be better understood further herein, external resources **29** such as, for example, regulatory or licensing authorities, investigative agencies, financial services, payroll services, and the like.

(9) Users **11** of the distributed system **10** of the present invention, including both employee users **12** and employer users **13**, are required from time-to-time to access the service manager program **22** hosted on the server **21**, and vice-versa. To this end, implementations of the distributed system **10** of the present invention include the provision of computing devices **14**, which, may range from mobile communication devices to tablet computers to desktop computers, and the like. Most preferably, the various communications as will generally take place between the computer server **21** and either an employee **12** or an employer **13** should as much as possible utilize otherwise conventional means. That said, the implemented computing device **14** must minimally host a user application **15** for communication between the employee **12** or an employer **13** and the service manager program **22**, **15** which application **15** may execute within an execution environment **16** conventionally provided within the computing device **14**. As is otherwise conventional, the user application **15** is adapted to communicate through a service data gateway **19**, such as a network interface device (Ethernet card or wireless transceiver), or mobile telephone transceiver, and which is typically provided with computing systems or mobile devices. As also shown in FIG. **1**, the user application **15**, whether configured for use of an employee **12** or an employer **13**, communicates with the service manager program **22**, and vice-versa, through the service data gateway **19** and the user gateway **28**. In this manner, the service manager program **22** is readily adapted to securely utilize information from, and securely provide information to, the user application **15** for the facilitation of temporary employment services.

(10) As previously noted, each employer **13** is be required to maintain specified computing hardware and software, as necessary for authentication of a selected employee's identity. To be sure, it is considered a critical aspect of the present invention that unlike ordinary temporary staffing agencies and the like the services made available through the distributed system **10** of the present invention enables the employer **13** to positively authenticate the identity of a selected employee **12** upon arrival of that employee **13** at the employer's location. To this end, the service manager program **22** is programmed and otherwise adapted to receive biometric data remotely obtained by the employer **13**, to compare the received biometric data with biometric data previously obtained and validated by the facilitator **20**, and securely stored in the template database **26** associated with the computer server **21**, and to then communicate authentication or rejection to the employer **13**. In this manner, a temporary employee **12** may be selected and brought on site by the employer **13** with mere hours or less notice of a vacancy in a shift, the selected employee **13**

being positively associated with the required credentials through use of the distributed system **10**.

(11) In order for the employer **13** to capture the required biometric marker, however, the computing device **14** utilized by the employer **13** must have, or be associated with, a suitable biometric capture device, such as may comprise a camera **17**, or like imaging device capable of photographing the face of the presenting employee **12**, or a scanner **18**, or like device capable of imaging the fingerprint, retina, or the like, depending on the particular implementation, of the presenting employee **12**. In any case, any provided camera **17**, scanner **18** or like device is made available for use of the user application **15**.

(12) Additionally, however, the most preferred implementations of the distributed system **10** of the present invention also includes a capability within the user application for converting the raw output from the camera **17** and/or scanner **18** into a more suitable format for electronic transmission and for processing by the service manager program **22**. Whereas the user application **15** as deployed for use by an employee user **12** could be as simple as a web browser adapted to interface with a secure website hosted on the computer server **21**, the user application **15** as deployed for use by an employee user **13** is most preferably a specialized application including functionality for utilizing a template format to convert the raw output from the camera **17** and/or scanner **18** into biometric interchange data.

(13) As will be appreciated by those of ordinary skill in the relevant arts, the biometric data is most preferably converted to fingerprint template formats or face image template formats, or the like, as are well-known under various U.S. and international standards such as, for example, ANSI 378 (Finger Minutiae Format for Data Interchange), ANSI 385 (Face Recognition Format for Data Interchange), and ISO 19794 (Biometric Data Interchange Formats). These biometric interchange data formats produced are well known to provide efficiently transmitted data, and comparison algorithms for biometric markers presented in these formats are readily available.

(14) In order to better understand the preferred methods of the present invention, an example of the utilization of the system is given with respect to FIG. **1**. It should be appreciated, however, that the example now provided is exemplary only and an implementation within the scope of the present invention may include more or less than the described steps. That said, utilization will generally begin with a prospective employee **12** signing up for use of the services of the facilitator **20**. According to the most preferred method of the present invention, this communication to take place through the user application **15**, in which case the prospective employee **12** will use a computing device **14** as a user interface to communicate with the application **15**, as required to provide all necessary personal and professional information as dictated by the position, and which information is stored in the customer base **25**.

(15) Once the employee **12** has requested service, the service manager program **22** on the computer server **21** will access external resources **29** to obtain and/or verify the employee's credentials and licensing status. If the prospective employee is qualified for use of the services, biometric markers, such as, for example a facial image or set of fingerprints, are obtained by the facilitator **20** and stored in the template base **25** and image base **27**. Such markers as fingerprints may be utilized to further validate the employee **12** through additional background checks or the like, including checks to ensure the identity of the employee **12**, who should for this part of the process appear in person at the facilitator's place of business. While storage of facial images in native formats, such as, for example, PNG, JPEG, BMP, GTF, RAW, within an image base **27** is not strictly necessary to the authentication process, such storage is advantageous to the extent that such images can be later transmitted to a hiring employer **13** for such purposes as initial identification upon arrival of the employee **12** at the employer's work site, and for advance preparation of security passes or the like. In any case, once an employee user **12** is accepted for use of the system, basic information such as, for example, qualifications, availability, pay rate, and the like is posted in a preferably secure location for access and review by employer users **13**.

(16) As shown in FIG. **2**, prospective employers **13** sign up for use of the services of the facilitator

20 by providing necessary identifying information and executing appropriate contractual and financial documents, all of which are preferably stored in the customer database **25**. The accepted employer **13** is then provided with, or otherwise obtains, the necessary computing hardware and software to securely access the computer server **21**, as well as to collect and process biometric markers. Once set up as described, the employer **13** then securely accesses the computer server **21** when a need for a qualified temporary employee **12** arises. Upon finding a suitable match, the employer **13** transmits a request for the selected employee **12**, which request is forwarded by the server **21** to the identified employee **12**, who may either accept or rejected the post.

(17) Once an employee **12** accepts a post, the service manager program **22** operates to identify the necessary credentials for legal employment by the selecting employer **13**, and securely transmits the required documentation to the employer **13**, along with any other useful information, including, for example, a photograph of the employee **12** retrieved from the image database **27**. The selecting employer **13** then need only wait for the arrival of the employee **12**, at which point the employer **13** will obtain at least one biometric marker from the presenting employee **12**. The obtained marker will preferably be converted into template format, and, in any case, will be transmitted to the service manager program **22** for authentication of the identity of the presenting employee **12**. At this point, as shown in the figure, the most current status of the employee **12** may optionally be updated. If, however, the status utilized and the identity successfully validate, the employee **12** is set to work as agreed.

(18) Upon completion of the posting, the employer **13** reports completion to the service manager program **22**, along with any review or rating, if such provision is made in the particular implementation. The service manager program **22** then most preferably confirms with the employee **12** that the reported completion is accurate. In at least the most preferred implementations of the distributed system **10** of the present invention, the service manager program **22** further operates to bill for or even automatically obtain payment for services rendered, which will preferably include a premium for use of the service. In any case, the service manager program **22** reports the transaction to the employee **12** and should also arrange for or make payment to the employee **12**.

(19) While the foregoing description is exemplary of the preferred embodiment of the present invention, those of ordinary skill in the relevant arts will recognize the many variations, alterations, modifications, substitutions and the like as are readily possible, especially in light of this description, the accompanying drawings and claims drawn thereto. In any case, because the scope of the present invention is much broader than any particular embodiment, the foregoing detailed description should not be construed as a limitation of the scope of the present invention, which is limited only by the claims appended hereto.

Claims

1. A distributed system for facilitating temporary employment in secure environments, said distributed system comprising: a service manager program hosted on a centralized server under the control of a third-party facilitator of temporary employment of a prospective prequalified employee by an employer, said centralized server providing data storage and communication services to said service manager program; a plurality of remote computing devices, wherein each said computing device: hosts an employer software application configured to provide electronic communication between an employer location and said third-party centralized server; and is provided with at least one associated biometric capture device; and wherein said service manager program is adapted to: accept a request for employment service transmitted through said employer software application of a requesting employer; provide documentation of credentials possessed by a selected prospective employee to said employer software application of said requesting employer; receive and validate biometric data of a person purporting to be said selected prospective employee, said biometric data

being generated by a said biometric capture device associated with said computing device of said requesting employer; and communicate verification or rejection of said biometric data of said person purporting to be said selected Prospective employee to said employer software application of said requesting employer.

2. The distributed system for facilitating temporary employment in secure environments as recited in claim 1, wherein at least one said associated biometric capture device comprises a fingerprint scanner.

3. The distributed system for facilitating temporary employment in secure environments as recited in claim 2, wherein at least one said associated biometric capture device comprises a camera.

4. The distributed system for facilitating temporary employment in secure environments as recited in claim 1, wherein at least one said associated biometric capture device comprises a camera.

5. The distributed system for facilitating temporary employment in secure environments as recited in claim 1, wherein said service manager program is further adapted to provide a photograph of said selected prospective employee to said employer software application of said requesting employer prior to said generation of said biometric data of said person purporting to be said selected prospective employee.

6. The distributed system for facilitating temporary employment in secure environments as recited in claim 1, wherein said request for employment service identities said selected prospective employee.