SOCIAL NETWORK BASED AUTHENTICATION FOR SECURE ACCESS

SUDHANSHU RAWAL

NISHA GANDOTRA

Follow this and additional works at: http://www.tdcommons.org/dpubs_series

Recommended Citation
RAWAL, SUDHANSHU and GANDOTRA, NISHA, "SOCIAL NETWORK BASED AUTHENTICATION FOR SECURE ACCESS", Technical Disclosure Commons, (January 06, 2016)
http://www.tdcommons.org/dpubs_series/93

This work is licensed under a Creative Commons Attribution 4.0 License.
This Article is brought to you for free and open access by Technical Disclosure Commons. It has been accepted for inclusion in Defensive Publications Series by an authorized administrator of Technical Disclosure Commons.
SOCIAL NETWORK BASED AUTHENTICATION FOR SECURE ACCESS

ABSTRACT

A system and method are disclosed for a user to provide remote temporary access to a locked door of his/her home by performing authentication using a social network site or any other suitable application. The system comprises a camera for authentication and employs an access control system that receives inputs from the user via a network connection. The system has a database to store and recover the picture of previously visited users. The system provides high security for homes by integrating social network-based authentication with the conventional door lock system, obviating the need to share access codes.

BACKGROUND

Door entry systems are commonly found integrated with access control systems based on some kind of authentication. The door entry system typically requires a PIN or a code to lock/unlock a user’s home, apartment etc. Users may feel hesitant to share their PIN or access code with visiting friends or relatives. Further, it is not secure to share the PIN or code with visitors who in turn could share the same with other acquaintances. However, situations may still require the user to share the PIN with visitors to provide access to their home, thereby risking security. Thus, there is a need for a secure method to provide home access to visitors.

DESCRIPTION

This disclosure presents a system and method for a user to provide remote temporary access to a locked door of his/her home to allow a visitor. The system as shown in FIG. 1 uses a camera for access control that may be placed near the front door from where it can monitor visitors for authentication. The access control system is provided with memory to store authentication credentials or record of entry and receives control inputs from an application via a network connection. The application may be a web page or a mobile phone application. The system envisages providing authentication for access to the user’s home
using information available on a social network site or any other web location as illustrated further.

FIG. 1: System for providing social network-based authentication

The method for providing remote temporary access to a locked door is illustrated schematically in FIG. 2. The method requires a user to access a visitor’s social network page via the application for instructing the system to provide access by referencing the social network page of the visitor. The application then shares the visitor’s picture from the social networking page to the access control system for authentication. The access control system then compares the visitor’s picture captured in the camera with the picture sent by the application and grants temporary access to the visitor.

Multiple levels of access may be provided to different visitors depending on his/her relationship with the user. The user may segregate various people in his/her social circle into different tiers based on the level of access that the user wishes to provide them in his/her absence. Such a mapping can be stored in a database associated with the system. Similarly, if the user had previously provided remote access to some visitor who is not in his/her social
network circle, then the user need not ask for their picture. The database could recover the picture from the system’s saved items.

Alternatively, if the visitor is not in the user’s social networking circle, then a two level authentication is implemented. For example, if the user gets a call/text from his/her domestic help who is not in the user's social circle and is waiting outside their home, the user

![Diagram](image-url)
asks them to send their picture to the user. On receiving the picture on his mobile phone, the user visually verifies it and then selects the option "provide home access" on the application, which communicates the access permission to the access control system. Further, the access control system performs a second-level verification by matching the received picture with the picture captured by the camera.

In one scenario, a user's friend John reaches the user’s home while the user just left to pick his kids up. On arriving, John sends a message via a social networking site to the user indicating that he has reached and asking when the user will be back home. The user, upon seeing the message, visits John's social networking profile and selects an option "provide home access" on the application. The application retrieves John's picture from John's social networking site profile and shares it with the door-lock system. On receiving John's picture, the system compares the received picture to John's actual picture captured by the camera at the door. If the pictures are identical, the system provides access to John. In the meantime, the application could also notify John automatically that access to the main door is provided to him by the user.

Additionally, the message may also provide a list of areas/services that John has access to before the user arrives home. For example, John can be provided access to areas such as guest room and bathroom by standing near the respective door for a predetermined amount of time. He may also get connected to the home Wifi automatically when he is in the guest area. The user's office friends may be provided access to the guest area, bar area, and user's Wifi while the user's domestic help may be provided access only to the kitchen area. Similarly, the user's close family may be provided access to more than one area such as bedroom, TV area, or may access the entire home.
The user is no longer required to share his/her code or PIN with the visitor. Thus the system can provide high security to homes by integrating social network based authentication with the conventional door lock access control system.