



Methods for Identifying Users using text typed on an Input Device

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Description

Method of identifying and verifying a user's identity based on any form of typed text, such as an email, a Web blog, a chat, or an examination essay in a networked, Web-based, or a stand-alone computer environment. The method works on input from a computer keyboard but can be extended to input from devices such a touch screen of iPod or iPhone. Working prototype.

Advantages

- The user identification methods can be easily installed as an application over any operating system with minimal requirements of memory.
- More samples result in increase in accuracy; in laboratory testing two small paragraphs of training text resulted in 87% to 96% accuracy; as the system gathers more training data, we have achieved 100% identification and verification results in a networked environment (see performance summary below).
- The user identification methods provide a tunable threshold parameter for automatic enhancement or relaxation of security settings.
- The user identification methods are capable of fast (in a fraction of seconds) and efficient user identification given typed text.

Performance Summary

- To empirically evaluate the performance of the user identification methods, a keystroke data set was collected from ten users, where each user provided 15 typing samples. From the provided typing samples, 6 distinct datasets were created in which the number of user identification attempts varies from 150 to 54600. Results on the datasets indicate that the identification accuracy of the methods is as high as 100%.
- In an independent third party evaluation of the software in a networked Web-based environment, the accuracy reached 99.88% correct verification if the training samples are more than three paragraphs.

Areas of Application

- The user identification methods can be used to identify users, either continuously or periodically, during login session. The methods can be integrated with various applications, such as email and chat, to automate user identification.

Patent Status

- US 8,489,635 and US 9,268,927