

Claims

1. A method of user identification by sequence of opened user interface windows, performing using a computing device, the method comprising:

- _____ registering a user credentials in the system for a user;
- 5 - _____ assigning an appropriate credential user ID;
- _____ assigning an identifier to each user interface window opened by the user;
- _____ throughout the working session of the ~~identified~~ user, recording a sequence of opened user interface windows; ~~wherein:~~
 - saving an identifier of the window, which is currently opened by the user, and an opening
10 time of the window;
 - with each transition to a new user interface window, saving an identifier of ~~this~~ the new
user interface window and a time when it was opened;
 - _____ accumulating data on a pre-set number of working sessions of the user;
 - _____ analyzing the accumulated data, ~~notably, including~~ identifying ~~the a pattern, the pattern~~
15 including a repeating sequences of the ~~visited user interface~~ windows ~~(patterns)~~;
 - _____ calculating a set of parameters characterizing ~~the a~~ time elapsed interval between ~~the a~~
transitions of ~~a given the~~ user from one ~~user interface~~ window to another ~~user interface~~ window
for each identified pattern and averaged over all working sessions of the user in which this
pattern is encountered, the averaged time interval is calculated using a weighted average, and a
20 number of windows separating a time interval from an initial time interval or a final time interval
of the pattern is taken as the weight for each working session;
 - _____ saving ~~the a~~ specified number of patterns of ~~a given the~~ user and, on the basis of the set
of parameters calculated for each pattern, training at least one classifier to identify ~~a given the~~
user by the sequence of ~~visited pages~~ windows; and
 - 25 - _____ applying ~~the trained at least one~~ classifier, ~~that was trained~~, to further confirm the identity
of the user, during the working sessions of which ~~at least one the~~ classifier was trained.
- 2. The method of claim 1, wherein the ~~user interface~~ windows are web pages.

3. The method of claim 1, wherein the identified patterns are additionally selected such that their length and number satisfy ~~the a~~ pre-set criteria, and the sets of parameters are calculated only for the selected patterns.

4. The method of claim 3, wherein the identified patterns are additionally selected such that patterns with the maximum possible length are selected, and their number should be no more and no less than pre-set values.

5. The method of claim 1, wherein patterns comprising pre-defined ~~user interface~~ windows ~~can are be~~ assigned with a priori weights which are taken into account when ~~choosing or~~ training the ~~at least one~~ classifier such that the corresponding patterns exerted a proportionally greater or lesser effect on the final decision of the at least one classifier.

~~6. The method of claim 1, wherein the set of parameters calculated for each pattern includes the time elapsed between the transitions of a given user from one user interface window to another user interface window and averaged over all working sessions of the given user in which this pattern is encountered.~~

~~67.~~ The method of claim ~~61~~, wherein the set of parameters calculated for each pattern further includes ~~the a~~ dispersion, calculated as ~~the a~~ variance, for ~~the a~~ time intervals between the transitions of the ~~given~~ user from one ~~user interface~~ window to another ~~user interface~~ window.

~~78.~~ The method of claim ~~61~~, wherein the set of parameters calculated for each pattern further includes ~~the a~~ frequency of ~~this the~~ pattern in the working sessions of the ~~given~~ user.

~~89.~~ The method of claim ~~87~~, wherein the frequency is taken into account when ~~choosing or~~ training the at least one classifier such that patterns with a higher frequency exerted a proportionally greater effect on the final decision of the at least one classifier.

~~910.~~ The method of claim 1, wherein the classifier is trained by ~~the a~~ method of machine learning.

~~1011.~~ The method of claim ~~910~~, wherein the classifier ~~can be implemented as is~~ a probabilistic graphical model or ~~as~~ an SVM classifier.

~~1112.~~ A system of user identification by sequence of visited user interface windows, the system comprising:

— a unit for registration of user credentials in the system;

— a system clock configured to tag time;

- a unit for identification of the current user interface window;
- a long-term memory configured to store ~~the~~a database;
- a computing device configured to perform the method according to any of claims 1- ~~to~~
~~11~~10.

5 ~~1213. A remote banking service system comprising t~~The system of claim ~~_1211~~, wherein the system of user identification by sequence of visited user interface windows is an integral part of a remote banking service system.

10 ~~1314. A website, which involves user authorization, comprising T~~the system of claim ~~_1211~~, wherein the system of user identification by sequence of visited user interface windows is an integral part of a website, which involves user authorization.

10 ~~1415. A multiplayer computer game, which involves user authorization, comprising T~~the system of claim ~~_1211~~, wherein the system of user identification by sequence of visited user interface windows is an integral part of a multiplayer computer game, which involves user authorization.

15 ~~1516. A software and hardware system for collaboration, which involves user authorization, comprising T~~the system of claim ~~_1211~~, wherein the system of user identification by sequence of visited user interface windows is an integral part of a software and hardware system for collaboration, which involves user authorization.