CLAIMS

WE CLAIM:

1. A computer implemented method for authenticating a user using one or more mobile applications in a mobile device, the method comprising:

selecting, by a processor (104), one or more mobile applications in the mobile device, used by the user for a usage bracket matrix computation, wherein a usage based authentication software application is enabled in the mobile device;

enabling, by the processor (104), the one or more selected mobile applications for usage based authentication computation via a usage authentication interface (114);

calculating, by the processor (104), usage statistics for the one or more selected mobile applications, wherein usage statistics comprises usage numbers (UN) for the one or more selected mobile applications;

generating, by the processor (104), one or more usage patterns for the one or more selected mobile applications, wherein the one or more usage patterns of the one or more selected mobile applications includes usage of the one or more selected mobile applications classified as high, medium, and low based on the usage numbers;

storing, by the processor (104), the one or more usage patterns in the usage bracket matrix, wherein the usage bracket matrix stores the usage numbers;

enabling the user, by the processor (104), to enter a user-fed usage pattern through an I/O interface (106) wherein the user-fed usage pattern is matched with the one or more usage patterns stored in the usage bracket matrix; and

authenticating the user, by the processor (104), to log on to the mobile device based on successful matching of the one or more usage patterns in usage bracket matrix with the user-fed usage patterns.

2. The method according to claim 1, wherein the generating the one or more usage patterns comprises:

configuring one or more parameters to generate the one or more usage patterns, wherein the one or more parameters comprises a wave "w", a time "t" and one or more weights "W";

collecting a set of data points for the one or more selected mobile applications for the usage based authentication computation, wherein the set of data points comprises a total usage time of each selected mobile application, number of launches of each selected mobile application, and a longest duration of launch of each selected mobile application;

defining constants for the one or more parameters wave "w" in hours, time "t" in hours, and parameter Weights as (W1, W2, W3);

calculating a set of usage pattern parameters (p1, p2, p3) for each selected mobile application using the data collected and the defined constants periodically at time interval of "t";

assigning ranks (r1, r2, r3) to the set of the usage pattern parameters (p1, p2, p3) for each selected mobile application;

calculating the usage numbers of the one or more selected mobile applications, wherein the usage number are calculated using the parameter weights (W1, W2, W3), the set of usage pattern parameters (p1, p2, p3) and the ranks (r1, r2, r3); and

storing and mapping the usage with the usage bracket, wherein the usage bracket is defined by a range of usage numbers.

3. The method according to claim 1, wherein the usage based authentication identifies one or more mobile applications to calculate the usage frequency of the one or more mobile software applications by the user.

4. The method according to claim 2, wherein the step of calculating the set of usage pattern parameters (p1, p2, p3) for each selected mobile application comprises:

calculating a usage percentage (p1), wherein the usage percentage (p1) is calculated by total time spent on the one or more mobile software application (in hours) in a wave/w) *100;

calculating the application launch frequency percentage (p2), wherein the application launch frequency percentage (p2) is calculated by number of times the one or more mobile software applications are launched in a wave/Total number of the one or more mobile software application launches in the wave) *100; and

calculating a longest Active Duration (p3) for the one or more mobile software applications, wherein the longest Active Duration (p3) indicates the longest duration usage of the one or more mobile software applications in a single session.

5. The method according to claim 2, wherein the usage number is calculated for each selected mobile application during the wave using formula UN = (W1(r1) + W2(r2) + W3(r3)) / (W1 + W2 + W3).

6. The method according to claim 1, wherein a range of the usage numbers from 5 to 10 is defined for low level, wherein a range of the usage numbers from 3 to 5 is defined for medium level and wherein a range of the usage numbers from 1 to 3 is defined for high level.

7. A system (100) for authenticating a user of a mobile device, the system comprising:

a memory (102) storing instructions;

a processor (104) coupled to the memory (102), wherein the memory further comprises:

an identification module (112) to select one or more mobile applications in the mobile device used by the user, wherein a usage based authentication software application is enabled in the mobile device;

a usage authentication interface (114), to display and select the mobile applications used by the user to compute usage based authentication;

a usage pattern computing module (116) to calculate usage statistics for the one or more selected mobile applications, wherein the usage statistics comprises usage numbers (UN) for the one or more selected mobile applications, and wherein the usage pattern computing module (116) generates one or more usage patterns for the one or more selected mobile applications, wherein the one or more usage patterns of the one or more selected mobile applications includes usage of the one or more selected mobile applications classified as high, medium, and low based on the usage numbers;

a usage bracket matrix, wherein the usage bracket matrix stores the one or more usage patterns and the usage numbers generated by the usage pattern computing module (116);

an I/O interface (106) to enable user to enter a usage pattern, wherein the user-fed usage pattern is matched with the one or more usage patterns stored in usage bracket matrix; and

an authentication applications module (118), wherein the authentication applications module (118) allows user to log on to the mobile device based on successful matching of the one or more usage patterns in usage bracket matrix with one or more user-fed usage patterns as input.

8. A non-transitory computer readable medium comprising thereon instruction which when executed by a possessor on a system, cause the processor to perform a method comprising:

selecting, by an identification module (112), one or more mobile applications in the mobile device, used by the user for a usage bracket matrix computation, wherein a usage based authentication software application is enabled in the mobile device;

enabling the one or more selected mobile applications for usage based authentication computation by a usage authentication interface (114);

calculating usage statistics for the one or more selected mobile applications by a usage pattern computing module (116), wherein usage statistic comprises usage numbers for the one or more selected mobile applications;

generating one or more usage patterns for the one or more selected mobile applications by a usage pattern computing module (116) wherein the one or more usage patterns of the one or more selected mobile applications includes usage of the one or more selected mobile applications classified as high, medium, and low based on the usage numbers;

storing the one or more usage patterns in the usage bracket matrix, wherein the usage bracket matrix stores the usage numbers generated by the usage pattern computing module (116);

enabling the user to enter a usage pattern through an I/O interface (106) wherein the user-fed usage pattern is matched with the one or more usage patterns stored in the usage bracket matrix; and

authenticating the user by an authentication applications module (118) to log on to the mobile device based on successful matching of usage pattern in usage bracket matrix with one or more user-fed usage patterns as input.

9. The non-transitory computer readable medium according to claim 8 further storing instructions when executed by a processor on a system, cause the processor to perform method comprising:

configuring one or more parameter to generate the one or more usage patterns, wherein the one or more parameters comprises a wave "w", a time "t" and one or more weights "W";

collecting a set of data points for the one or more selected mobile applications for the usage based authentication computation, wherein the set of data points comprises a total usage time of each selected mobile application, number of launches of each selected mobile application, and a longest duration of launch of each selected mobile application;

defining the constants for the one or more parameters: wave "w" in hours, time "t" in hours, and parameter weights as (W1, W2, W3);

calculating a set of usage pattern parameters (p1, p2, p3) for each selected mobile application using the data collected and constants defined above periodically at time interval of "t";

assigning ranks (r1, r2, r3) to the set of the usage pattern parameters (p1, p2, .. p3) of each selected mobile application;

calculating the usage numbers of one or more selected mobile applications, wherein the usage number is calculated using the parameter weights (W1, W2, ..W3), of the set of usage pattern parameters (p1, p2, ..p3) and the ranks (r1, r2, ..r3); and

storing and mapping the usage numbers into the usage bracket.

10. The non-transitory computer readable medium according to claim 8 further storing instructions when executed by a possessor on a system, cause the processor to perform method comprising:

calculating a usage percentage (p1), wherein the usage percentage (p1) is calculated by total time spent on one or more mobile selected mobile applications (in hours) in a wave/w)*100;

calculating an application launch frequency percentage (p2), wherein the application launch frequency percentage (p2) is calculated by number of times one or more mobile software application is launched in a wave/Total number of the one or more selected mobile applications launches in a wave)*100; and

calculating a longest Active Duration (p3) for the one or more selected mobile applications, wherein longest Active Duration (p3) indicates the longest duration usage of the one or more mobile software application in a single session.