What if we intentionally add feedback

Continuous Mobile Authentication Using A Novel Graphic Touch Gesture Feature

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extract the time duration, the length of touch traces, the directions and speeds of finger move- ments, and the tactile pressures.

**Secure Unlocking of Mobile Touch Screen Devices by Simple Gestures – You can see it but you can not do it**

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using distin- guishing features such as finger velocity, device acceleration, and stroke time.

we extract the following seven types of features: velocity magnitude, device acceleration, stroke time, inter-stroke time, stroke displace- ment magnitude, stroke displacement direction, and velocity direction.

The second challenge is to segment each stroke into sub- strokes for a user so that the user has consistent and dis- tinguishing behavior for the sub-strokes.

The third challenge is to learn multiple behaviors from the training samples of a gesture because people exhibit different behaviors when they perform the same gesture in different postures such as sitting and lying down.

The fourth challenge is to remove the high frequency noise in the time series of coordinate values of touch points.

The fifth challenge is to design effective gestures.

The sixth challenge is to identify gestures for a given user that result in low false positive and false negative rates.

When training data is only from one class (i.e., the legitimate user in our scenario) while test samples can come from two classes (i.e., both the legitimate user and imposters), Support Vec- tor Distribution Estimation (SVDE) with the Radial Basis Function (RBF) kernel is effective and efficient [8, 16].

**LatentGesture: Active User Authentication through Background Touch Analysis**

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collecting touch features such as position on screen, time, frequency, and pressure through common sensors available on mobile devices today using the Nexus 4 phone and Nexus 7 tablet.