A Systematic Review of Features Identification and Extraction for Behavioral Biometric Authentication in Touchscreen Mobile Devices

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Abstract— **Today, mobile devices are being <u>widely</u> used in personal and professional life. By increasing the popularity of touchscreen platform as an input method in mobiles phones, touch gesture behaviour is becoming more significantly important in interaction with the phone. Due to increasing demand for safer access in touchscreen mobile phones, old strategies like pins, tokens, or passwords have failed to stay abreast of the challenges. By utilizing touch gesture behaviour biometric techniques, the authentication mechanism will improve and would make it more difficult for a shoulder surfer to replay the password, even if he observes the entire gesture. The purpose of this research is to conduct a systematic literature review SLR for the current state-of-the-art in the field of touch features gesture. The results of this research identified thirteen touch features followed by the previous studies (PSs) to authenticate users. However, based on the schemes followed by the previous studies (PSs) there was not any scheme that extract and use all touch features for mobile user authentication. There are number of areas of future work that could be carried out to advance upon this research and within the area of authentication on mobile devices. Each of the pervious study (PS) extracted only one or more features. The maximum number of features used in S14 year 2014 and S15 year 2015 were seven features. Extracting thirteen touch features and use them for the authentication will be one contribution in future work.   .**

Keyword— **Biometrics, smartphone authentication, touch gesture authentication, mobile security and android authentication.**

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