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Recent advances in mobile touch screen security authentication methods: A systematic literature review

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COMPUTERS & SECURITY

Volume: 85 Pages: 1-24

DOI: 10.1016/j.cose.2019.04.008

Published: AUG 2019

Document Type: Review

[View Journal Impact](#)

Abstract

The security of the smartphone touch screen has attracted considerable attention from academics as well as industry and security experts. The maximum security of the mobile phone touch screen is necessary to protect the user's stored information in the event of loss. Previous reviews in this research domain have focused primarily on biometrics and graphical passwords while leaving out PIN, gesture/pattern and others. In this paper, we present a comprehensive literature review of the recent advances made in mobile touch screen authentication techniques covering PIN, pattern/gesture, biometrics, graphical password and others. A new comprehensive taxonomy of the various multiple class authentication techniques is presented in order to expand the existing taxonomies on single class authentication techniques. The review reveals that the most recent studies that propose new techniques for providing maximum security to smartphone touch screen reveal multi-objective optimization problems. In addition, open research problems and promising future research directions are presented in the paper. Expert researchers can benefit from the review by gaining new insights into touch screen cyber security, and novice researchers may use this paper as a starting point of their inquiry. (C) 2019 Published by Elsevier Ltd.

Keywords

Author Keywords: Mobile device security; Graphical password; PIN based authentication; Biometric security; Touchscreen gesture/pattern; Natural algorithms

KeyWords Plus: USER AUTHENTICATION; IRIS RECOGNITION; PHONE; DESIGN

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Funding

Funding Agency	Grant Number
Tetfund Institutional Based Research Grant, Federal College of Education (Technical), Gombe	

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Journal Information

Impact Factor: [Journal Citation Reports](#)

Categories / Classification

Research Areas: Computer Science

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