

**EXTENDED VISUAL CRYPTOGRAPHY SCHEME (EVCS) TO
SUPPORT BIOMETRIC SECURITY DATABASE: STUDY CASE FOR
PALM PRINT RECOGNITION**

By

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The background features a large, light blue watermark of the letters 'SGU' with a registered trademark symbol (®) to the right. Below this, the text 'SWISS GERMAN UNIVERSITY' is written in a smaller, light blue font.

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STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge. It contains no material previously published or written by another person, nor material which is a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.

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ABSTRACT

EXTENDED VISUAL CRYPTOGRAPHY SCHEME (EVCS) TO SUPPORT BIOMETRIC SECURITY DATABASE: STUDY CASE FOR PALM PRINT RECOGNITION

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Biometric nowadays becomes popular in term of authentication system. Many institutions and companies start to use biometric in addition besides using password or smartcard to authenticate a person in order to prevent unauthorized person to access their system. As the development of biometric in authentication system, the attackers try to search the vulnerability of it in order to have the authority into the system. One of the vulnerability of the biometric system that the attacker addressed is in the biometric database. Many system of biometric still save the biometric template characteristic in database in the form of plain image. There is no encryption methods used to secure the biometric database which makes easier for the attacker to sabotage the biometric system. This research focuses on how to secure the biometric database using EVCS (Extended Visual Cryptography Scheme). The study applied on 198 trainingset palmprint images and 10 validationset of palmprint images. From the research, it is found that EVCS can be used for securing biometric template database without losing much information and the quality of the decrypted image reach 40.95 dB for simulation and 41.49 dB for validation. The system also successfully authenticate decrypted image with the percentage of true positive that is 82.45% for simulation and 90.00% for validation.

Keywords: *EVCS, Biometric, Palmprint, Security, Authentication.*



DEDICATION

I dedicate this research to my beloved husband and my lovely little children
that always give me never ending spirit and encouragement

Also to my Country: Indonesia



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