

**AUTOMATED STUDENT'S ATTENDANCE ENTERING
SYSTEM BY ELIMINATING FORGE SIGNATURES**

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Declaration

We declare that this thesis is our own work and has not been submitted in any form for another degree or diploma at any university or other institution of tertiary education. Information derived from the published or unpublished work of others has been acknowledged in the text and a list of references is given.

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Date:

Supervised by

Mr. B. H. Sudantha

Date:

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Abstract

Entering student's attendance into the excel sheets for each of the subjects, is very difficult, time consuming process. At the beginning of some course modules, the number of registered students are unknown. Lecturers use papers to take students attendance, so that the entering of student's attendance is more complex. Automated student's attendance entering system can be used to simplify the task. To build up such a system signature recognition and verification is important.

The signature of a person is an important biometric attribute of a human being which can be used to authenticate human identity. To automate the process, this thesis consists of 3 phases. Signature identification and extraction from the attendance sheets and classification for testing process, Signature recognition by comparing each signature in the database and recognize the owner of the signature and the last phase is signature verification to identify whether the signature is original or counterfeit. In each phase, necessary image processing techniques are applied and useful features are extracted from each signature. Support Vector Machine (SVM) is used for classification of signatures extracted from attendance sheets. For signature recognition, multiclass Support Vector Machine is used and analyze using Fault Acceptance Ratio (FAR) and Fault Rejection Ratio (FRR) to check the accuracy of the classifier. Signature database consists only genuine signatures of each signer so that in signature verification stage a machine learning technique, Kolmogorov Smirnov test is used to verify the signature is belong to the original and if it is not match with the particular student's signature, taken as zero. In this paper, off-line signature recognition & verification is proposed, where the signature is captured and presented to the user in an image format.

A software package, Matlab2016b is used for this procedure. The described method in this thesis represents an effective and accurate approach to automatic signature recognition and verification. It is capable of matching the test signatures with the database of 83.33% accuracy. It is capable of classifying all signatures in the attendance sheet of 100% accuracy. In this work, it verifies 100% of signatures is original.

Eventually, based on the methodologies employed in this thesis, it provides a promising stage for the development of an automated online signature detection system.

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