VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

A PROJECT REPORT ON

"DEEP LEARNING BASED EFFECTIVE SIGNATURE VERIFICATION SYSTEM USING CNN AND PATTERN RECOGNITION"

Submitted in partial fulfillment for the award of Degree of

BACHELOR OF ENGINEERING

IN

COMPUTER SCIENCE & ENGINEERING

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2023-24

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CERTIFICATE

This is to certify that the project entitled **"DEEP LEARNING BASED EFFECTIVE SIGNATURE VERIFICATION SYSTEM USING CNN AND PATTERN RECOGNITION"** has been successfully completed by

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The bonafide students of **DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING, ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY** of the **VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI** during the Year 2023–24. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of Project work prescribed for the Bachelor of Engineering Degree.

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ABSTRACT

The progress of new innovation, the technology security frameworks are being supplanted by a great deal more propelled methods to identify a person. These procedures are called biometrics, which include checking a person's organic attributes, for example, face, retina, unique finger impression, iris, voice, signatureand so forth. Formally, biometrics alludes to the ID ofpeople by their attributes ortraits. In this thesis we propose a human signature recognition system based cannyedge detection and pattern averaging and backpropagation neural network system,that has the capability of determining the human handwritten signatures of presented signature images of different individuals with different scales, illuminations and different signature writing style of same signature image. In addition, this thesis proposes a simple, easy, and fast processing approach to extracting an average of useful features from a signature image using a technique called pattern averaging. This technique plays an important role in reducing the processing and training time and also in improving the recognition rate of the neural network. The experimental results show that the trained back propagation neural network is capable of recognizing human handwritten signatures regardlessof scale, illumination, and difference is writing style of the signatures.