Signature Verification Using Deep Learning

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Abstract: Online attacks have advanced significantly in recent years. Two-factor authentication, which is used to protect online banking users, has not evolved at the same pace, meaning that users are not sufficiently protected against these new and advanced attacks. This raises an important question: is it possible to make online activities more secure for the user? More specifically, we want to understand whether it is possible to prevent online attacks by involving the user? Signature verification as compared to traditional handcrafted system, where a forger has access and also attempt to imitate it which is used in commercial scenarios, like bank check payment, business organizations, educational institutions, government sectors, health care industry etc. so the signature verification process is used for human examination of a single known sample. As Signature is the primary mechanism both for authentication and authorization in legal transactions, the need for efficient auto-mated solutions for signature verification has increased. The captured values of the handwritten signature are unique to an individual and virtually impossible to duplicate.

Keywords: Machine Learning, Deep Learning, Verification, Unique.

I. INTRODUCTION

Signature verification is now-a-days one of the important aspects of security. Our research aims towards comparing customers present signature with the ones submitted earlier. And if in case forgery exists, our mechanism will help to identify it too. This will help us to instantly determine whether the signature is real or not and thus will help in improving the security at multiple levels. We are going to apply machine learning and deep learning concepts for creation of this project. Handwritten signature is one of the most generally accepted personal attributes for verification with identity whether it may be for banking or business. The majority of places perform manual verification, which might be troublesome at times. With our project implementation the manual work of verifying the signature will also get reduced.

II. PROBLEM STATEMENT

To implement a handwritten signature verification model using machine learning and deep learning to discriminate between original and forged signature. In this project, we aim to develop a system which will compare users present signature (test signature) with the reference signatures submitted at the time of registration for training purpose. This system offers to compare the current signature to every signature stored in the database.

III. OBJECTIVES

1. To discriminate if a given signature is genuine (produced by the claimed individual), or a forgery (produced by an impostor).
2. To meet the objective of customer convenience with sufficient security.
3. To normalize the signature image and system checks whether the signature matches with original signature.