Informatics Institute of Technology

In Collaboration with

University Of Westminster

WRITER IDENTIFICATION

USING HANDWRITING ANALYSIS AND DEEP LEARNING

A Dissertation by

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April 2023

Submitted in partial fulfilment of the requirements for the

BEng (Hons) in Computer Science at the University of Westminster, UK

ABSTRACT

Handwriting is a sort of behavioral human biometrics that is unique to each individual and changes over time. It can be used as a secondary identifying mechanism for systems that require verification or in legal proceedings. Different factors such as the writing tool used, the type of paper used, the ink flow, and the pressure used when writing all contribute to a person's handwriting, making it difficult to manually identify the writer of an unidentified document. Because handwriting can be copied in circumstances of litigation requiring writer identification, an accurate assessment is critical.

This research project attempts to automate writer identification by following a novel deep learning approach in order to further improve accuracy in predictions compared to already existing systems. Even though there are current existing implementations that follow a deep learning approach, they do not implement solutions that utilizations feature extraction methods. Additionally, the author attempts to create a standardized dataset of the Sinhala language since none exists and also it is recognized as a low resource language which further validates the need of creating a dataset.

To conclude this research will greatly contribute both the technical and domain aspect of writer identification as the development of a novel deep learning approach and the creation of a standard dataset of a low resource language will be beneficial to the field. The proposed solution can also be used as a method for detecting perjury in litigation.

Keywords:

Subject Descriptors:

- Computing methodologies → Machine learning → Machine learning approaches → Neural networks
- General and reference → Document types → Surveys and overviews