AUTONOMOUS TYPEWRITING EVALUATION

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PROBLEM STATEMENT

▶ The Department of Technical Education in Tamil Nadu conducts typewriting exams using traditional typewriting machines, producing hard copies of typed text for assessment. Currently, these answer sheets are manually corrected using question papers, which is time-consuming and subject to human error. The challenge is to develop a machine learning model capable of evaluating and assigning marks to the typed text from the hard copy, automating the assessment process to improve efficiency, accuracy, and overall effectiveness of the typewriting exams.

ABSTRACT

▶ This research seeks to address the inefficiencies and inaccuracies in the current typewriting exam assessment process conducted by the Department of Technical Education in Tamil Nadu. By developing a robust character recognition model, this project aims to automate the evaluation of typed text from hard copies, eliminating the need for manual correction using answer sheets. This innovative solution involves comparing the recognized text with both the original answers and the user-typed responses to provide real-time and precise evaluations of typists. The anticipated outcomes include improved efficiency and objectivity in the assessment process, ultimately revolutionizing the typewriting examination system and showcasing the potential of machine learning and automation in educational and professional assessments

LITERATURE SURVEY:

▶ Handwritten and Typewritten Text Identification and Recognition using Hidden Markov Models

In this paper, the authors introduce a system that utilizes hidden Markov models (HMMs) for the identification and recognition of handwritten and typewritten text within document images. The process involves initial text type identification using OCR decoding to establish word boundaries, followed by word-level classification as either handwritten or typewritten using HMMs. The study demonstrates that incorporating contextual constraints from HMMs yields superior results compared to the conventional Gaussian mixture model (GMM)-based method. Furthermore, the identified text type is used to estimate frame sample rates and frame width for feature sequences in the HMM OCR system, with each type being treated independently. This type-specific approach to determining frame parameters significantly enhances OCR accuracy compared to type-independent approaches.

LITERATURE SURVEY:

▶ CNN based Optical Character Recognition and Applications

The process of converting images containing handwritten, typewritten, or typed text into a computer-readable format is known as Optical Character Recognition (OCR). OCR serves various purposes, including text editing, indexing, searching, and reducing storage space requirements. It accomplishes this by scanning the image character by character, processing the scanned data, and ultimately transforming each character into character codes like ASCII. The key components of OCR include pre-processing, character recognition, character segmentation, and data presentation. In this paper, the authors focus on character recognition, utilizing Convolutional Neural Networks (CNNs), specifically the VGG-16 architecture, to achieve this task. They discuss the CNN layers and the implementation of the CNN architecture. Furthermore, the paper involves training the CNN model on a Telugu character dataset containing up to 1600 characters and evaluating its accuracy.

Thank You!