

# **VISVESVARAYA TECHNOLOGICAL UNIVERSITY BELAGAVI**



**A**

## **MINI PROJECT SYNOPSIS ON “AI BASED HANDWRITING CONVERTER”**

Submitted in partial fulfillment Management of the Bachelor Degree

In

**ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING**

**V SEMESTER**

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# ABSTRACT

The **AI-based Handwriting Converter** project aims to bridge the gap between digital text and personalized handwriting styles, providing users with a unique and interactive way to present written content. This project leverages advanced artificial intelligence techniques to extract handwriting styles from user-uploaded samples and convert typed text into images resembling the original handwriting style. Initially, the project utilizes Optical Character Recognition (OCR) to identify and extract text from handwritten samples. This extracted style serves as a reference for generating handwritten representations of typed text from uploaded PDFs. The system features a user-friendly web interface, enabling seamless interactions where users can upload their handwriting samples and documents. Additionally, the final output is a newly generated PDF that maintains the original layout while incorporating the user's handwriting style. By implementing this innovative solution, we aim to enhance the personalization of written communication and offer a novel tool for educational and creative applications.

# INTRODUCTION

The advent of technology has revolutionized communication, with handwritten notes and letters often being replaced by typed text. However, the personal touch of handwriting remains cherished in various fields, including education, art, and personal correspondence. The **AI-based Handwriting Converter** project aims to restore this personal touch by utilizing artificial intelligence to convert typed text into handwritten styles. The project addresses the need for personalized writing tools that replicate individual handwriting styles accurately. With the growing demand for digital solutions that cater to personal expression, this project provides a unique opportunity to blend technology with creativity. By extracting handwriting features from user samples, the system generates a handwritten version of any text, ensuring that the essence of the original handwriting is preserved. This project not only enhances the aesthetics of digital communication but also offers a meaningful way to incorporate personal style into modern writing, thus bridging the gap between traditional and digital formats.

## EXISTING SYSTEM

Current methods for converting text into handwriting primarily rely on static fonts that mimic handwritten styles, lacking authenticity and personal touch. These systems often use predefined handwriting fonts that do not represent the unique characteristics of an individual's handwriting, leading to a generic output that fails to resonate with users. While some applications allow users to upload handwritten samples, they typically do not integrate the extraction and generation processes effectively. Additionally, many existing systems are limited in functionality, only providing basic text-to-handwriting conversion without considering layout preservation or the ability to convert documents like PDFs. This creates a need for more sophisticated solutions that not only replicate individual handwriting styles but also maintain the formatting and integrity of the original text. Our project aims to address these shortcomings by developing an AI-driven solution that accurately captures and reproduces personal handwriting styles while providing a seamless user experience.

# PROPOSED SYSTEM

The proposed **AI-based Handwriting Converter** system aims to revolutionize the way handwritten text is generated from digital input by integrating advanced artificial intelligence techniques. This system will extract handwriting styles from user-uploaded samples using Optical Character Recognition (OCR) and machine learning algorithms. The extracted style will serve as a reference for generating handwritten representations of typed text from uploaded PDFs. Users will be able to upload their handwriting samples and PDFs through a user-friendly web interface, ensuring an intuitive experience. The system will maintain the original layout of the PDF while converting the text into the extracted handwriting style, allowing for high-quality outputs that retain both aesthetics and functionality. By utilizing state-of-the-art technology, this project will provide a unique solution for individuals looking to personalize their written communication. Furthermore, the system will also offer additional features, such as editing options and the ability to save and share converted documents easily.

# SYSTEM REQUIREMENTS SPECIFICATION

## HARDWARE REQUIREMENT

- |              |                      |
|--------------|----------------------|
| 1. RAM       | 8GB                  |
| 2. Processor | Intel Core i7 11 Gen |
| 3. ROM       | 512 GB SSD           |

## SOFTWARE REQUIREMENT

- |                     |  |
|---------------------|--|
| 1. Front End        | HTML and CSS   |
| 2. Back End         | Python   |
| 3. FrameWork        | Django/Flask   |
| 4. Image Processing | Open CV and Tesseract OCR                            |
| 5. Text Extraction  | PyMuPDF/PDFMiner for PDF.                            |
| 6. Data Sets        | IAM (Institute of Applied Mathematics) and Kaggle DB |

# CONCLUSION

In conclusion, the AI-based Handwriting Converter project presents a novel solution to enhance personal communication through technology. By leveraging AI and OCR, the system accurately extracts and replicates individual handwriting styles, allowing users to convert typed text into personalized handwritten formats seamlessly. This project not only preserves the charm of handwritten notes in a digital context but also opens new avenues for creativity and expression, making it a valuable tool for various applications.