Team Members :

Kundana Sri – 3122223002023

Bharathi   -- 3122223002024

Biancaa   -- 3122223002025

OPTICAL CHARACTER RECOGNITION

Abstract:

This paper presents an Optical Character Recognition (OCR) system utilizing Optical Character Detection (OCD) for the accurate identification of characters and digits from various written sources with high accuracy. Conventional approaches often rely on APIs such as Pytesseract or deep learning models based on PyTorch to extract text from skewed or image-based formats. While these methods achieve high accuracy, they are computationally intensive, necessitate a substantial amount of storage, and are impractical for deployment on low-power microcontrollers and edge devices. Furthermore, cloud-based APIs are not always a viable solution due to network accessibility constraints.

To address these limitations, this study proposes the development of a Convolutional Recurrent Neural Network (CRNN)-based machine learning model optimized for deployment on resource-constrained edge devices. The proposed model ensures efficient local processing without compromising prediction accuracy, thereby enabling seamless integration into compact, low-power portable devices.