

# Recognition of Handwritten Modified Devanagari Characters using Deep Learning on Augmented Dataset

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## ABSTRACT

This study introduces a method for recognizing handwritten modified Devanagari characters using a convolutional neural network (CNN) model, emphasizing performance improvement through data augmentation. Handwritten modified Devanagari character recognition is crucial for Optical Character Recognition (OCR), particularly in India's diverse linguistic landscape. CNNs are effective for image processing, making them suitable in this context. Notably, while research exists for normal Devanagari characters, there are limited studies focusing on modified Devanagari characters. By employing advanced model architecture and image augmentation techniques, the research aims to enhance accuracy and recognition rate in classifying handwritten modified Devanagari characters, addressing challenges like varying handwriting styles and script complexities. The performance of the model is evaluated using metrics such as recall, f1-score, and accuracy. This study contributes to advancing OCR technology in multilingual contexts, supporting applications in document processing, text analysis, and language understanding. Overall, the proposed approach offers a method for more accurate and efficient recognition of handwritten modified Devanagari characters.

**Keywords:** Optical character recognition, Deep learning, Convolutional neural network

## How to Cite

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