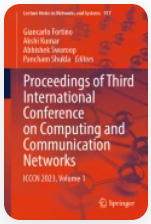
# Design and Implementation of a Hybrid Deep Learning Framework for Handwritten Text Recognition

| Conference paper | First Online: 21 July 2024

| pp 279–291 | Cite this conference paper




**Proceedings of Third International Conference on Computing and Communication Networks**

(ICCCN 2023)

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**Part of the book series:** Lecture Notes in Networks and Systems ((LNNS,volume 917))

**Included in the following conference series:**
International Conference on Computing and Communication Networks

## Abstract

Text recognition technology has seen significant advancements in recent years, particularly with the use of Optical Character Recognition (OCR) to evaluate computer-generated text. However, there is much more work to be done in the field of Handwritten Text Recognition (HTR). The challenges posed by handwritten text, such as significant variations in strokes across writers, the vast variety of handwriting styles, human error and damages to the paper, present substantial difficulties in accurately identifying and recognizing handwritten alpha-numeric data. To address these challenges, we proposed a deep learning method that combines long short-term memory (MD-LSTM) and convolutional neural networks (CNN) architectures. This model can identify numbers and characters of the English language from input images. Based on MNIST dataset, bidirectional recurrent neural networks were used to construct the output sequence which was developed using the TensorFlow Framework. The accuracy for alphabets, numbers and alpha-numeric texts are 95.2%, 94.9% and 94.7% respectively. The mean character match index is computed to be 93.2%. The proposed model can substantially boost HRTs precision and efficiency making it more accessible.

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## Cite this paper

Anand, H., Singh, M., Rawade, V., Sahoo, S., Mishra, S., Abualigah, L. (2024). Design and Implementation of a Hybrid Deep Learning Framework for Handwritten Text Recognition. In: Fortino, G., Kumar, A., Swaroop, A., Shukla, P. (eds) Proceedings of Third International Conference on Computing and Communication Networks. ICCCN 2023. Lecture Notes in Networks and Systems, vol 917. Springer, Singapore. https://doi.org/10.1007/978-981-97-0892-5_22

.RIS .ENW .BIB

DOI
https://doi.org/10.1007/978-981-97-0892-5_22

Published
21 July 2024

Publisher Name
Springer, Singapore

Print ISBN
978-981-97-0891-8

Online ISBN
978-981-97-0892-5

eBook Packages
Engineering
Engineering (R0)

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