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# Innovations in Intelligent Systems and Applications Conference : Submission (12) has been created.

1 message

**Microsoft CMT** <email@msr-cmt.org> Fri, May 12, 2023 at 7:12 PM
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Hello,

The following submission has been created.

Track Name: ASYU2023

Paper ID: 12

Paper Title: Advancements in Optical Character Recognition for Bangla Scripts

Abstract:
OCR systems are very powerful tools that are used to convert handwritten texts or digital data on an image to machine readable texts. The importance of Optical Character Recognition (OCR) for handwritten documents cannot be overstated due to its widespread use in human transactions. OCR technology allows for the conversion of various types of documents or images into machine understandable data that can be analyzed, edited, and searched. In earlier years, manually crafted feature extraction techniques were used on comparatively small datasets which were not good enough for practical use. With the advent of deep learning, it was possible to perform OCR tasks more efficiently and accurately than ever before. In this paper, several OCR techniques have been reviewed. We mostly reviewed works on Bangla scripts and also gave an overview of the contemporary works and recent progresses in OCR technology (e.g. trOCR, transformer w/ CNN). It was found that for Bangla handwritten texts, CNN models like DenseNet121, ResNet50, MobileNet etc are the commonly adopted techniques because of their state of the art performance in object recognition tasks. Using an RNN layer like LSTM or GRU alongside the base CNN based architecture, the accuracy can be further improved. TrOCR is a fairly new technique in this field that shows promise. Experimental results show that, On synthetic IAM handwriting dataset it showed a CER of 2.89. The goal of this paper is to provide a summary of the research conducted on character recognition of handwritten documents in Bangla Scripts and suggest future research directions.

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Primary Subject Area: Doğal Dil İşleme / Natural Language Processing

Secondary Subject Areas: Derin Öğrenme / Deep Learning
Görüntü İşlemede Akıllı Yaklaşımlar / Intelligent Approaches to Image Processing
Makine Öğrenmesi / Machine Learning
Örüntü Tanıma / Pattern Recognition

Submission Files: Advancements_in_Optical_Character_Recognition_for_Bangla_Scripts.pdf (179 Kb, Fri, 12 May 2023 13:11:47 GMT)

Submission Questions Response: Not Entered

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