A Minor Project Synopsis on

Text Orientation of Image Text

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Introduction:

Text orientation optimization is a critical task in image processing, particularly in the field of optical character recognition (OCR). The aim is to correct the slant, skew, or de-skew of text in images to ensure accurate recognition. The traditional methods of text orientation optimization such as edge detection, Hough transforms, and template matching are often time-consuming and inaccurate. In recent years, deep learning models have shown promising results in text orientation optimization.

Literature Review:

Studies have shown that deep learning models can accurately detect and correct the slant, skew, or de-skew of image text. Convolutional Neural Networks (CNNs) and Recurrent Neural Networks (RNNs) are some of the most widely used deep learning models for text orientation optimization. These models have been trained on large datasets of images with text in different orientations and have shown improved accuracy compared to traditional methods.

Objectives:

The objective of this study is to create a deep learning model to optimize text orientation in images. The model should accurately detect and correct the slant, skew, or de-skew of image text, ensuring accurate recognition.

Hypotheses:

1. The deep learning model will perform better than traditional methods of text orientation optimization in terms of accuracy and speed.
2. The deep learning model will be able to generalize well to unseen images with text in different orientations.

Methodology:

The methodology of this study involves the following steps:

1. Data preparation: A large dataset of images with text in different orientations will be collected and pre-processed to extract the text and correct the orientation.
1. 2 Model selection: A suitable deep learning model such as a CNN will be chosen based on its performance in previous studies.
2. Training: The pre-processed images and their corresponding orientation labels will be fed into the deep learning model, and the model will be trained.

3. Evaluation: The deep learning model will be tested on a separate test dataset to measure its performance.

Abstract:

This study focuses on the creation of a deep learning model to optimize text orientation in images. The study aims to correct the slant, skew, or deskew of text in images to ensure accurate recognition. The deep learning model selected for this task is a Convolutional Neural Network (CNN), and it will be trained on a large dataset of images with text in different orientations. The results of this study will be evaluated based on accuracy, precision, recall, and F1 score. The study is expected to provide a highly accurate deep learning model that can be used for various text recognition applications.