

Comparative Analysis of OCR Models: Surya vs. GCP

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1. Introduction

This report evaluates the performance of two Optical Character Recognition (OCR) models, **Surya** and **Google Cloud Platform (GCP)**, in extracting text from images. The goal is to determine which model provides more accurate and readable results based on error analysis.

2. Methodology

The analysis was conducted by comparing extracted text from both models against the original text. The evaluation criteria included:

- **Accuracy:** How closely the extracted text matches the original.
- **Error Types:** Common mistakes made by each model.
- **Readability:** The clarity and usability of extracted text.
- **Consistency:** Frequency of errors across multiple samples.

3. Findings

3.1 GCP OCR Analysis

- **Common Errors:** Unnecessary spaces between words were a recurring issue.
- **Formatting Issues:** Words were often broken up incorrectly, reducing readability.
- **Accuracy:** While it generally retained correct characters, spacing issues required post-processing.
- **Consistency:** Errors were frequent across multiple samples, impacting overall reliability.

3.2 Surya OCR Analysis

- **Common Errors:** Occasionally, extra or missing characters were observed.
- **Better Word Structuring:** Words were maintained properly without unnecessary spacing.
- **Higher Readability:** Extracted text was easier to read and understand compared to GCP.
- **Less Need for Post-Processing:** Errors were mostly within words rather than formatting issues.
- **Some Perfect Extractions:** Several cases showed no errors, proving better overall accuracy.

4. Conclusion

Based on the findings, **Surya outperforms GCP** in OCR text extraction. While GCP struggles with spacing errors, Surya maintains better word structure and readability. Despite occasional character errors, Surya provides a more usable output with less need for correction.

5. Recommendation

For accurate and readable OCR results, ***Surya is the preferred choice over GCP***. Future improvements could focus on refining character recognition in Surya, but its current performance already surpasses GCP in terms of usability and accuracy.
