

Use Case: AI Powered Document Data Extractor Platform

Client

A prominent Third-Party Administrator (TPA) offering claims processing, employee benefits management, and administrative services to leading insurance companies in India and the US, as well as large multinational corporations in India.

Business Problem

The client's operations revolved around processing insurance claims, which required extracting data from PDFs and scanned images of complex forms, particularly Uniform Billing Forms (UB Forms) and Healthcare Financial Administration claim forms (HFCA Forms). Manual data extraction was error-prone and time-consuming, with data accuracy hovering at a low level. The inconsistent layout of the forms, coupled with poor document quality, posed significant challenges. Extracting data from UB and HFCA forms took around 30 minutes each, driving the need for an AI-powered solution to drastically enhance accuracy and operational efficiency.

Solution

To address the intricacies of data extraction from UB and HFCA forms, we devised a comprehensive AI-powered solution:

- **Deep Learning Model Training:** A deep learning model was trained on a substantial dataset of UB and HFCA claims form data, enabling it to discern complex data patterns inherent in the forms.
- **OCR Enhancement:** By incorporating AI-driven improvements to Optical Character Recognition (OCR) technology, we bolstered the accuracy of text extraction from scanned documents.
- **Custom Table Extraction:** Custom-built models were designed to extract data from tables within the forms, overcoming the inherent complexity of tabular data extraction.
- **Document Classification:** To accommodate the diverse document types, we developed a document classification model. This facilitated the invocation of either the UB or HFCA data extraction model based on the document type.



- Document Quality Enhancement: Our solution included models for image denoising and tilt correction, enhancing the overall quality of scanned documents.
- Accelerated Processing: Utilizing GPU processing, our AI models dramatically reduced data extraction time from 30 minutes to a mere 30-40 seconds per form.
- Seamless Integration: The AI models were deployed on-premise and seamlessly integrated with the client's existing back-office application through secure RESTful APIs.

Outcome

The adoption of our AI-enhanced Document Data Extraction solution yielded remarkable outcomes:

- Operational Efficiency: The efficiency of UB and HFCA form data extraction experienced a significant boost, leading to an overall improvement of over 80%. Time-intensive manual extraction was replaced by rapid AI-driven processing.
- Enhanced Accuracy: Data extraction accuracy surged from a mere 30% to an impressive 85%, revolutionizing the reliability of extracted information.
- Resource Optimization: The solution enabled the client to conserve significant human efforts previously devoted to manual data extraction. This freed up valuable human capacity that could be allocated to more strategic and critical tasks.
- Streamlined Operations: The integration of AI seamlessly into their existing workflow elevated the efficiency and effectiveness of claims processing, leading to heightened customer satisfaction.

Conclusion

Our AI-powered Document Data Extraction solution revolutionized the operational landscape for the Third-Party Administrator. By significantly enhancing accuracy, expediting extraction, and optimizing resources, the client redefined their claims processing paradigm, driving higher efficiency, reliability, and strategic allocation of human resources.