

AI TRANSFORMATION TALES

Seamless Metadata Extraction with Artificial Intelligence



BACKGROUND

Founded in 1999 as a catalyst for a bigger change in the realm of the chemical industry, our client bridges the gap between suppliers and customers with its tailored customer solutions. With new opportunities and successful business outcomes, come new challenges to make them even more valuable. One such problem made our client approach Aspire Systems, and problem-solving is in our DNA.

Our client engages in exclusive product line relationships with premier manufacturers for over 90 supplier partners globally. And all of this soon added up to the proliferation of metadata, which complicated metadata management for our client. Considering how AI has been a panacea for almost all modern business challenges, we proposed an AI-powered document classification and metadata extraction capability as a potential solution for the presented business challenge. Here are the business activities our client wanted us to develop an AI process for:



BACKGROUND

- Classification of documents and extract metadata from them.
- Identification of various patterns of documents and translate them semantically
- Handling and processing huge volumes of data and information across the organization
- Extraction and classification of metadata from the documents

The client wanted to implement an AI/ML-powered solution to eliminate the manual errors that occur during document extraction and metadata classification with a view to improving customer experience and its metadata management while enhancing process accuracy.



THE SOLUTION

As a solid foundation for our partnership with the client, Aspire's AI/ML experts conducted a thorough analysis to understand and develop the most practical solution for the presented business challenges. With a clear understanding of the client's requirement and expectations, our AI/ML specialists, who have strong industry experience working on projects that heavily depend on AI/ML algorithms and data management, proposed an innovative solution that is developed on AI and ML technologies and demonstrated the same to the client for its approval. Here are some major activities involved during the implementation:

- **Standardization:** All documents were converted into a common format (PDF or image) for consistent processing.
- **Document Splitting:** Large documents were divided into smaller sections for efficient handling and improved accuracy.
- **Document Classification:** A CNN classifier categorized documents (invoices, contracts, reports, etc.) for targeted processing.
- **Content Extraction:** Advanced tools like Tesseract extracted text, tables, and charts from the documents.
- **Metadata Extraction:** A YOLO model identified and extracted specific data points (dates, amounts, names, addresses).
- **Consolidation and NER:** The system combined results, including document type, extracted content, and entities (organizations, locations, people) for comprehensive understanding.



TECHNOLOGY SNAPSHOT

- Machine Learning and AI Algorithms
- AI extract engine
- CNN Classifier
- YOLO – You Only Look Once – Object Detection Model



BUSINESS BENEFITS

- Time and costs involved previously were cut in half
- Ability to handle and process huge volumes of datasets
- Increased accuracy and zero human-errors
- Implementation of more organized input methods
- Augmented metadata extraction from each scanned document





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