

From Manual Document Handling to Automated AI-Driven Ingestion

AMBITION

The construction industry generates a vast volume of complex documents, ranging from architectural blueprints to technical specifications in various formats like Word, JPEG, and PDF. For a leading North American provider of construction intelligence, processing these manually was a labor-intensive and expensive endeavor prone to errors that threatened business continuity. The organization required a consistent, rule-based Construction Document Ingestion System (CDIS) to automate the receipt and classification of these delicate information assets.

ACTION

Wipro Engineering – Connected Services developed a standardized, scalable platform capable of processing over 20 distinct document formats. The technical team implemented a workflow that converts all incoming files into a uniform PDF format to facilitate precise metadata extraction. Engineers applied Optical Character Recognition (OCR) to identify specific sections and page numbers, while Random Forest machine learning algorithms were utilized to automatically classify documents into specialized categories, such as plumbing, electrical, or mechanical plans. To ensure operational resilience, developers integrated a DevOps pipeline that automates build deployments and manages AWS infrastructure services, including load balancing and server autoscaling.

AMBITIONS REALIZED

The transition to an AI-driven ingestion framework significantly accelerated document processing speeds while ensuring high data accuracy.

The Business Impact:

- **Accelerated turnaround times** for the initial receipt, acceptance, and acknowledgement of critical construction documents.
- **Reduced manual overhead** by automating the verification of document accuracy and correctness.
- **Standardized multi-format ingestion** supporting seamless processing for Word, PDF, and image-based files.
- **Automated classification** using machine learning to categorize complex technical plans and specifications.
- **Enhanced system availability** through automated infrastructure scaling and load balancing on AWS.

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