

# The Paperless Engine

Intelligent Document Processing (IDP)

● AI/ML Technical Documentation ● Production Systems ● Fintech Innovation ●

Technical Documentation Series

December 2024

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## Executive Summary

Intelligent Document Processing transforms unstructured documents into actionable data using multimodal AI that understands both text and layout.

<div>95%+</div> <div>Extraction Accuracy</div>	<div>10x</div> <div>Faster Than Manual</div>	<div>99.8%</div> <div>Error Reduction</div>
<div>LayoutLM</div> <div>Model Architecture</div>	<div>1000+</div> <div>Doc Types</div>	<div>&lt;3sec</div> <div>Processing Time</div>

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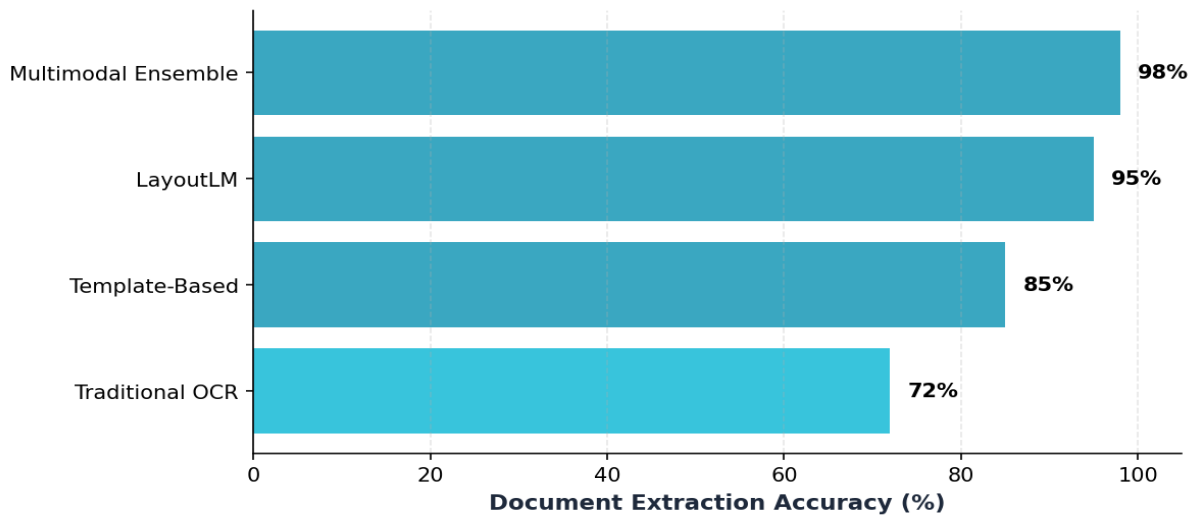
## Multimodal Transformer Architecture



- **Model Components**

- **LayoutLM:** Understands document structure and spatial layout
  - **Donut:** OCR-free document understanding
  - **Vision Transformers:** Image-based document analysis
  - **NLP Extractors:** Entity recognition and relationship extraction
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## Processing Pipeline



**Transformation Impact:** IDP reduces manual data entry by 95%, eliminates 99.8% of errors, and processes documents 10x faster than humans while maintaining audit trails and compliance.

## Key Applications

### • Financial Documents

- Invoice processing and GL coding
- Bank statement parsing
- Tax form extraction (W-2, 1099, etc.)
- Contract analysis and metadata extraction

### • Compliance & Governance

- Version control for contract lineage
- Regulatory metadata tagging
- Cross-document entity resolution
- Audit trail maintenance