IDA Classification

Learning instead of rule writing

IDA Classification organizes your documents automatically without complex rule sets and without programming skills. Advanced few-shot learning requires only a handful of sample documents to train new classes. The combination of textual and visual analysis ensures exceptional accuracy even with minimal differences. The result: Drastically reduced setup times, minimal maintenance effort, and improved straight-through processing rates – even with over 200 document classes.

KEY FEATURES

Few-shot learning capabilities

IDA Classification uses advanced few-shot learning that analyzes both visual and textual features. New document classes are ready in hours instead of weeks. When your document types change or expand, the system adapts without extensive reconfiguration. This not only minimizes time-to-value but also significantly reduces maintenance effort.

No-code training

Users without programming skills can independently create, train, and customize classification models. The browser-based user interface makes machine learning accessible to everyone.

Easy deployment and integration

IDA is deployed either on-premises or in a (private) cloud as a Java application or containerization using Docker. The gRPC API (alternatively REST API) facilitates swift integration.

CONFIGURATIONS

Input: JSON (proprietary “PAI File”, e. g. from previous Recognition)
Output: PDF, PDF/A, JSON

REQUIREMENTS

For 64-bit systems

Linux: Ubuntu 18.04-25.10, Debian 11-13, CentOS 8-10, Red Hat 8.x-10.x, LEAP 15.4-15.6, 16.0; SLES 15 SP 4-7
Windows: 10, 11
Windows Server: 2016, 2019, 2022, 2025
Docker

At least **12 GB hard disk storage** + varying sizes of self-trained models depending on settings (up to about 1 GB per full classification training)

At least **16 GB RAM**

Leveraging unmatched OCR quality

IDA Classification is built on **IDA Recognition**, the OCR engine for outstanding results in the most difficult scenarios. Even with distorted scans, poor image quality, and difficult-to-read handwriting, IDA Recognition delivers the high-quality text foundation that's critical for reliable classification. Why this matters: Classification quality depends entirely on input data quality. IDA Recognition captures machine-printed and handwritten text, checkboxes, tables, and historical scripts as the perfect foundation for downstream processes.

Intelligent document splitting

Automatically separate scan batches with over 100 consecutive pages into individual documents? With IDA Classification, it is possible to train a neural network to automatically detect document boundaries in large files. Manual separation during scanning is eliminated, accelerating processes and eliminating sources of error.

TWO APPROACHES FOR DIFFERENT SCENARIOS

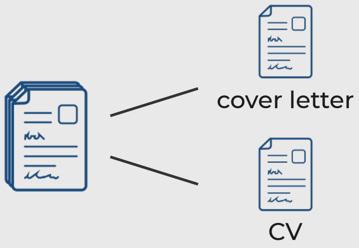
By feeding IDA a small set of tagged sample documents provided as directories, the system automatically recognizes significant characteristics and continues learning. IDA offers **classification methods** applicable to both single and multi-page documents.

Document Classification for understanding context as a whole

- Analyzes the entire text of a document for holistic classification.
- Ideal for scenarios such as sorting incoming mail by document type

Page Classification for sorting multi-page documents

- Analyzes individual pages while considering predecessor and successor pages.
- Ideal for sorting application documents in cover letter, resumes, certificates



Both classification methods are based on either a trainable neural network or a dictionary ("bag of words"). Based on the resulting classes, documents can be directed to different downstream processes, such as a data extraction task.

DOCUMENT SPLITTING: FROM BATCHES TO DOCUMENTS

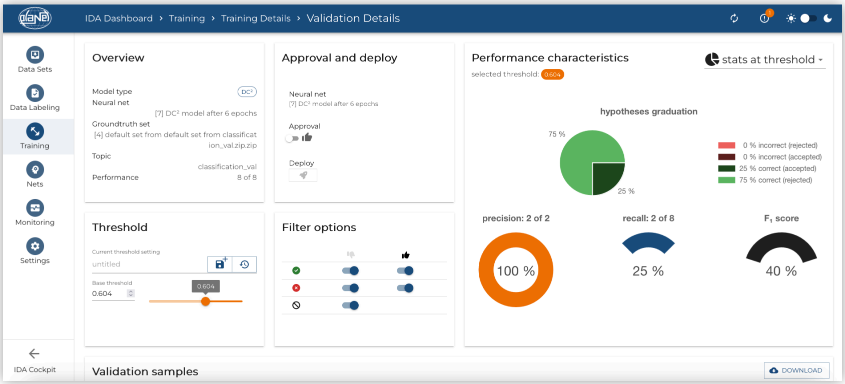
Business reality: Scanned document batches with 100, 200, or more consecutive pages. Manual separation is time-consuming and error-prone. With IDA, you can train a **neural network** that automatically recognizes document boundaries. The system learns where one document ends and the next begins.

- No manual separation during scanning required
- Reuse existing page classification models
- Alternative: Rule-based separation by fixed page count for uniform documents
- For structured forms, one blank template per class is sufficient

Current limitation: Designed for documents in correct order.

MODEL TRAINING

IDA provides a user-friendly graphical interface that allows for easy model training without requiring programming experience.



Model type: DC²
Neural net: [7] DC² model after 6 epochs
Groundtruth set: [4] default set from default set from classification_val.zip.zip
Topic: classification_val
Performance: 8 of 8

Neural net: [7] DC² model after 6 epochs
Approval
Deploy

selected threshold: 0.604

Current threshold setting: untitled
Base threshold: 0.604

🟥 0 % incorrect (rejected)
🟫 0 % incorrect (accepted)
🟩 25 % correct (accepted)
🟩 75 % correct (rejected)

precision: 2 of 2
recall: 2 of 8
F_1 score

Neural Network: the best choice for most scenarios

Training a neural network is the **recommended approach for most classification scenarios**. It considers both visual and textual features to create a model. During training, attention mechanisms learn to focus on the most relevant features.

Training requirements:

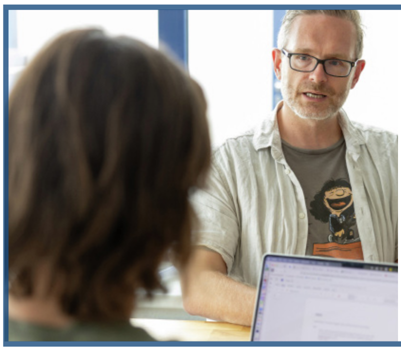
- Minimum: 20 documents per class + 10 validation documents
- Recommended: 100+ documents per class for optimal accuracy
- Special case for structured forms: 1 blank form per class is sufficient

Additionally, users have the option to select the **pre-trained, open-source LayoutLM** to enhance classification results for documents with similar layouts but different texts.

LayoutLM is a large language model designed specifically for document layouts and context understanding. Note that utilizing this option requires GPU hardware.

Bag of Words (dictionary): fast and efficient for simple cases

This option uses a **keyword-spotting approach** combined with the patented PerceptionMatrix capability. The bag-of-words model primarily considers textual features, which makes it suitable for less complex classification use cases. IDA performs a **search within each document based on a customizable list of words** (incl. word groups, sentences). Additionally, it is possible to search within the PerceptionMatrix, which preserves all possible transcriptions of a given text without any loss of information.



Experience IDA Classification for yourself and contact us for a personalized demo

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