

COGNITIVE SIGNATURE DETECTION

Tech Mahindra's cognitive signature detection (CSD) solution leverages cognitive artificial intelligence (AI) technologies to detect a human signature in any given official form or document.

More than thousand variants of forms are currently used by any organization across the globe. Our automated signature detection can enable the organization to fasten the process, with more accuracy through automation and save huge costs in terms of time and effort.

OUR SOLUTION

Tech Mahindra's CSD solution demonstrates the use of OpenCV, which intelligently detects a human signature from a given digital document. The solution has the capability to segregate between a human signature and other human written scripts.

Features of the Solution

- **Data Preprocessing:** Data provided with scanned documents and common issues such as rotation, inclination, blurred, and inconsistent scaling issues are fixed
- **Model Building:** Various object detection approaches/techniques (Yolo, ResNet, RetinaNet) evaluated to 92% accuracy. The model envisaged to accommodate and re-validate any false-positive cases by means of a workflow path to review, approve, and follow-up process.
- **Model deployment:** Deep learning signature detection model developed to be independently deployed into any cloud platform

Solution Technology

The framework is built based on open-source technologies.

- Open-source technology using Tensorflow and Keras
- Object detection using Yolo v3 with single shot detection and RetinaNet algorithms
- Object detection algorithm leverages ResNet CNN/Feature Pyramid network architectures

KEY CHALLENGES

The solution was developed for a world leading investment banking firm. The challenges included identification of a signature from the form submitted by the client and subsequently validation of the signature against a massive database.

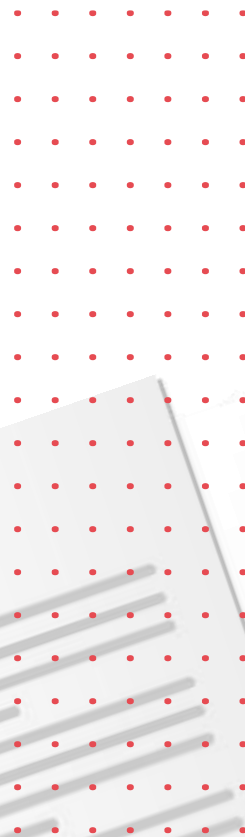
- Accurately identifying the location of signatures in the multiple variations of the forms and templates for the customer executives
- Heavy human dependency which leads to inefficient and error prone results with many false positives
- Existing optical character recognition (OCR) based solution not producing the desired outcome
- Skewed or low quality in scanned documents producing inaccurate results
- Frame a generic solution to accommodate and train all the variants/non-standard forms

BENEFITS

- Achieved process efficiency and enabled huge savings in terms of time and effort
- Significant reduction in manual processing time and elimination of human errors
- Automated process of signature detection is an AI-based solution which can be re-purposed for other use cases in multiple domains

TECHM NXT.NOW ADVANTAGE

- Diversified global player with 20+ years of data, analytics, and AI practice
- 11,000+ data, analytics, and AI associates with domain led consulting focus
- Global footprints across 55+ countries
- Partner-enabled ecosystem with COEs across all these technologies
- Comprehensive frameworks, processes and tools to move PoCs to production



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