# Artificial Intelligence Enhanced Character and Word Recognition

## Overview

Our client, a large financial corporation, processes thousands of applications daily through their screening system that requires the data to be manually digitized from physical documents.

The digitization process was marred with inaccuracies and errors resulting in a significant increase in the time and cost of the whole operation.

With advanced optical character recognition techniques available to help, the task was automated to a large extent. However, existing OCR technology still had limitations, such as errors in recognition or image quality requirements. Current off-the-shelf solutions were not acceptable for the job due to the required efficiency and precision of the data. The client needed something better. Adding AI to the Character and Word recognition provided the required extra precision of the data while retaining efficiency.

## Real Challenges

The challenges included creating an Intelligent Optical Character Recognition solution that could digitize physical documents, no matter the source of the documents (computer printed, clean or uneven fonts, hand-written). Requirements:

1. All data on the document had to be recognized and digitized. Any text on the document that could not be digitized must be resolved due to the sensitive nature of the data. No text could be skipped.
2. System must be capable of recognizing handwritten documents, including cursive text, within acceptable error limits.
3. Resolution issues should first be handled automatically by the AI. If not resolvable, human interaction would indicate the correct data, and the AI would learn from that instance.

# Our Approach

The Pegasus One team utilized the non-legacy Glyph based document processing engine for OCR. This allowed our team to implement:

1. An Information extraction engine, capable of reading the physical document with higher accuracy.

2. Low resolution document scanning support (with AI learning models).

3. For handwriting recognition, our team devised a Machine Learning AI model that learns every time a document is scanned. It's capable of reading and self-learning cursive, and other non-uniform styles of writing.

# Results

## High Precision
High precision character recognition

## Artificial Intelligence
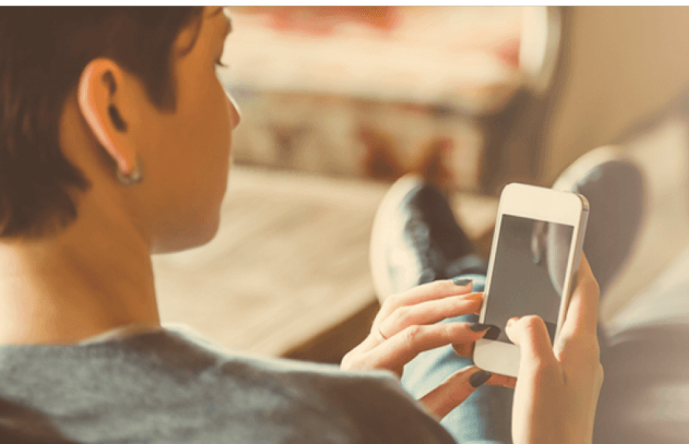Self learning ML model capable of reading cursive text

## Self Learning
Gets better with each scan

## Costs reduced
Operational costs reduced by about 40%

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