

Artificial Intelligence for Financial Management



MIL Uses AI to Support Mission Critical Financial Processes

MIL utilizes Artificial Intelligence (AI) tools to help clients quickly and effectively process a variety of forms, both structured and unstructured, such as invoices, payroll adjustments, and loans. Technology such as Google Cloud Platform (GCP) Document AI, and UiPath AI extensions allow us to perform functions outside the capability of simple robotic process automation (RPA), macros, and scripts. These AI tools allow MIL to utilize “intelligent” optical character recognition (OCR) to read documents and forms as a human would read them. This includes the ability to understand unstructured/semi-structured documents, pull value pairs easily from forms, and utilize natural language processing (NLP) to read the meaning of text. These AI tools are primarily “no code” or “low code” applications so that advanced programming is not required.

A Case Study: Processing Forms in a Time of Crisis

Challenge

During COVID-19, the Department of State (DoS) was facing nearly 90,000 American citizens returning from overseas to the United States. MIL proposed AI solutions to automate the process of establishing employee debts and promissory notes so that staff could ship items home and reimburse the Department afterwards. Automation was necessary due to the volume of transactions increasing 1,000 times over normal production levels. The process was intensively manual, as promissory notes were handwritten and physically delivered to DoS facilities for processing.

Solution

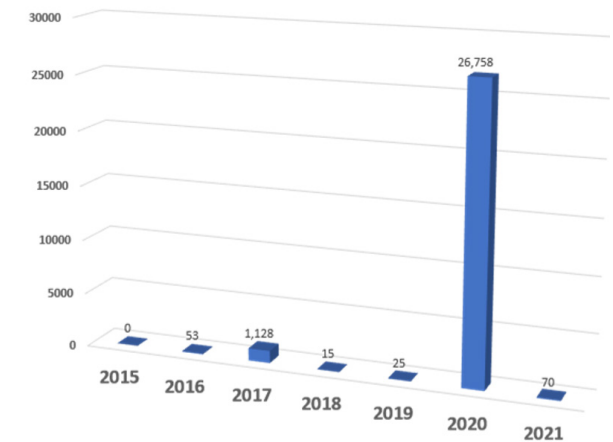
The solution utilized GCP AI to extract and parse out the handwritten form data into text. GCP’s Document AI service automated the field identification/data match and extracted data with confidence level information. The data was then picked up by an attended RPA bot process and imported into DoS’s financial system. To ensure accuracy, an automated reconciliation ran post-import, providing a match between the financial system data warehouse, log files, and import files.

GCP Document AI automatically identified key fields and values to be extracted without user input required (no-code), effectively turning unstructured content into structured content that was machine readable. The Intelligent Character Recognition function converted handwriting to text with incredible accuracy. The Machine Learning (ML) component allowed us to “train” the parser to increase confidence levels and accuracy of extractions.

Benefit

AI drastically reduced time to process thousands of promissory notes during a time of crisis – a feat that the client admitted would not have been possible if accomplished manually. Staff were able to ship their items home and be assured that reimbursements would be received in a timely fashion, reducing anxiety during a highly stressful period.

Quantity of Promissory Notes Billed



Additional Scenarios

Unstructured Invoice Intake

We utilize GCP Document AI to read invoices (in any format) for processing. The ML trained parser intelligently extracts key data from the invoice (due dates, amounts, vendors, etc.), with no-code required. Data with low confidence enter a Human-in-the-Loop workflow. Finally, a bot picks up data and enters it into the financial system.

Processing Payroll Forms

Using GCP AI/ML and the BigQuery database, we extract data from standard form SF-1190. We use a ML trained model to intelligently extract data from the form. Data with low confidence then enters a Human-in-the-Loop workflow. Next, all data is entered into the BigQuery database where a bot picks-up the data and enters it into the payroll system.