CROWDREASON USES iMERIT SERVICES TO STRUCTURE DATA, TRAIN ML ALGORITHMS

iMerit has had a long and fruitful engagement with CrowdReason, a technology services company focusing on providing property tax software and custom data services.

CrowdReason has huge volumes of taxation data from its client base, which includes companies in the telecommunications and oil and gas industries in North America. The data which varies widely across geographies, and tax jurisdictions, needs to be processed and structured quickly and accurately. iMerit's teams provide the human intelligence required for the task. The iMerit throughput was also used to train data in the CrowdReason Machine Learning workflow.

> " iMerit was, and continues to be, an invaluable partner for us. They provided us with accurate data early on, which helped us get up and running with the development of our tax property software. "
>
> **Brandon Van Volkenburgh,** CTO & Co-founder, CrowdReason

THE CHALLENGE

CrowdReason is focused on innovating and maintaining high-value automation solutions. Its solutions leverage robotic process automation, virtualized labor, machine learning, and blockchain technologies. One of CrowdReason's products, Total-PropertyTax, boasts a value proposition tied to saving clients' time, and ultimately money, tied to the management of property taxes.The company was looking to further optimize team effort and time by eliminating the routine data entry tasks that were inundating its highly-skilled employees.

When the company was developing this solution, it recognized that technical expertise combined with a data solution which provided high-quality data would be crucial to its Machine Learning process. While it had huge volumes of historical data, there was no standardization or control of how the data was being collected and organized.

THE SOLUTION

The CrowdReason team in consultation with iMerit experts developed a workflow to break down the data extraction process into smaller tasks, which could be tackled by iMerit's trained content annotation teams. Guidelines were built wherein specific questions about the property tax document bill i.e. its origin, the collector, the due date, the amount due, and other such relevant data points were extracted. iMerit workers answered these questions and returned responsesTo ensure data accuracy the process was triplicated, asking three different labelers the same question. If all agreed, the confidence in the result was higher.

Once the company's Machine Learning model was trained and able to generate this information automatically, iMerit was also involved in handling cases where the machine had low confidence in the data it produced. If the machine provided a low confidence answer, CrowdReason's process escalated it to an iMerit labeler, where an actual person retrieved the correct data. When multiple iMerit experts were not able to achieve consensus, the answer was then escalated to an iMerit team leader. The robotic process then aggregated the data and provided a full extraction of document information, along with the image of the document itself, to the client.
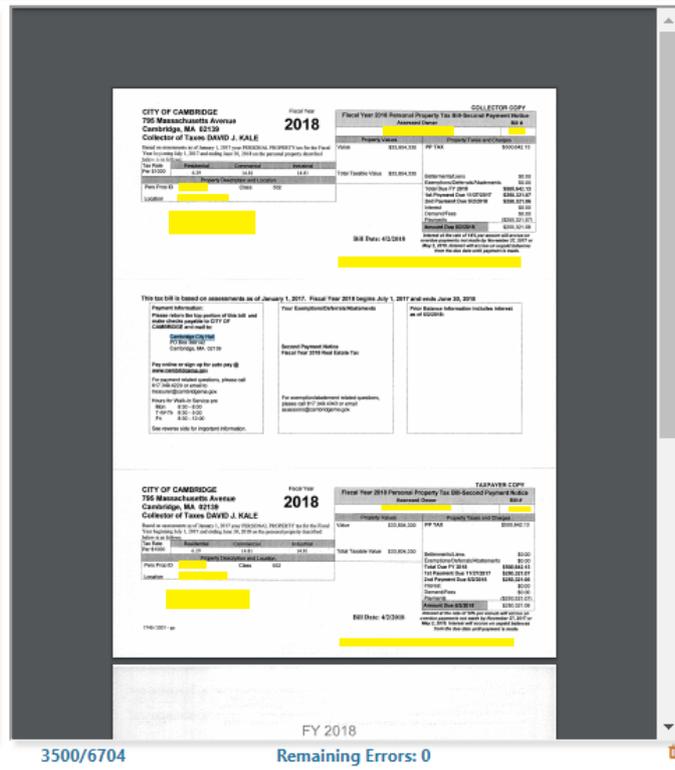
THE RESULTS

CrowdReason created a robotic process to automate a workflow and aggregate the data, seamlessly surfacing the extracted data to its clients in the TotalPropertyTax application. The secondary benefit was generating a "clean" database which could then be used to train a Machine Learning algorithm for future use. Over time, the company has worked Machine Learning into its production application. Its teams initially began by using 100-percent iMerit (human-produced) data, and now use 20-40 percent iMerit data, with the rest being generated entirely by a Machine Learning algorithm (trained with iMerit throughput).

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