PROBLEM

An E&P operator needed to better categorize and analyze rig activities to track and eliminate non-productive time and invisible lost time.

PROJECT

DeepNLP™ automatically analyzed rig activity logs, categorizing activities for increased insight into rig work time.

RESULTS

The project was able to demonstrate automation of a full-time human job, with accuracy on par to that achieved through two rounds of human QA.

THE PROBLEM

Non-productive time is the great enemy of all oil and gas operators. Despite all efforts from the best and brightest of the industry, non-productive time continues to comprise a whopping 20 to 25% of all rig operating time each year. For offshore rigs, this can add up to a loss in revenue of billions of dollars.

A similar but more insidious issue is that of invisible lost time. Invisible lost time refers to short but frequent tasks that cannot be effectively tracked by standard 15 or 30-minute reporting blocks, allowing them to steadily eat up undetected but significant amounts of operational time.

A better understanding of when, where, and why non-productive time and invisible lost time occur is necessary for operators looking to reduce inefficiencies and maximize production, but that's easier said than done. The defining attribute of invisible lost time is its difficulty to track. Non-productive time is more visible, but recording, categorizing, and analyzing it is a thorny problem. These processes require large amounts of human labor and time, and the end result is often imprecise. Different operators entering data into the same system may not define non-productive time the same way—and with any task so massive, human error is bound to be an issue as well. There is simply more data than any human can handle.

For one major upstream E&P operator, the labor required to analyze rig activity logs is equivalent to one full-time job. And since the categorization is both a lengthy and subjective process, QA resources are then required to check over and validate all categorization. The E&P operator wanted to find a better way to record and analyze their rig activity data, and so turned to natural language processing.

THE SOLUTION

To reduce operating costs and errors associated with rig activity logs, the E&P operator partnered with SparkCognition™, an AI solutions provider. Their goal was to create an autonomous system capable of analyzing the information contained within rig activity logs and presenting that information in a digestible format for human users.
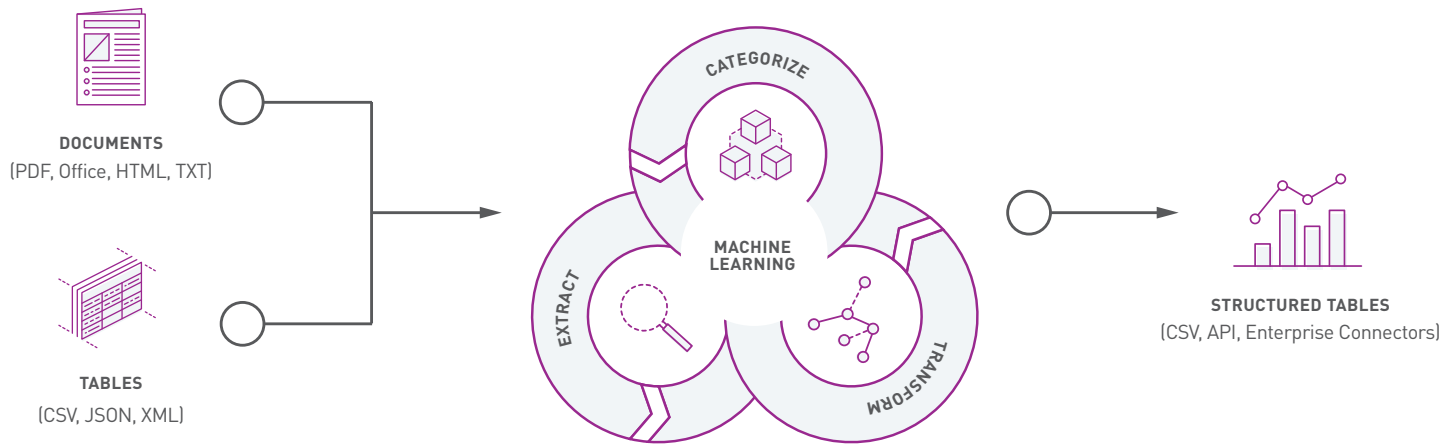
This was accomplished using SparkCognition's DeepNLP™ platform. DeepNLP is a machine learning-powered NLP platform that automates the retrieval of information, classification of documents, and content analytics. Its core functionality is to pull from unstructured, natural language content, such as written documents or images, and transform the information contained in that content into structured data, such as tables or categories.

THE RESULTS

DeepNLP™ was successfully able to categorize rig activity, labeling each activity with a code and sub-code for ease of analysis. In doing so, it was able to provide new insights into the most frequently occuring activities on the rig with high accuracy, such as identifying the 46 most frequently occuring code and sub-code combinations. This allowed operators to understand normal operating behavior and anomalies. Where previously the compiling of this information would have been labor-intensive and subject to biases and errors, DeepNLP was able to accomplish this with no human effort or input.

With this information, the E&P operator has been able to more effectively pinpoint non-productive time and invisible lost time, as well as their causes. Using this information, the operator will be able to maximize production and minimize inefficiencies in entirely new ways, and gain a substantial advantage against competitors.

[1] http://www.drillingcontractor.org/automated-rig-activity-analysis-offers-more-precise-method-for-reducing-npt-invisible-lost-time-27033

Contact SparkCognition today at info@sparkcognition.com

DOCUMENTS
(PDF, Office, HTML, TXT)

TABLES
(CSV, JSON, XML)

CATEGORIZE

MACHINE
LEARNING

EXTRACT

TRANSFORM

STRUCTURED TABLES
(CSV, API, Enterprise Connectors)

HOW DEEPNLP™ WORKS

DeepNLP enables organizations to automate workflows of unstructured natural language data data through advanced NLP and machine learning techniques. It transforms natural language content into structured data, which can then be used for process automation, decision support and analytics, and predictive modeling when paired with automated model building software.

ABOUT SPARKCOGNITION™

SparkCognition builds leading artificial intelligence systems to advance the most important interests of society. We help customers analyze complex data, empower decision making, and transform human and industrial productivity with award-winning machine learning technology and expert teams focused on defense, IIoT, and finance.

SparkCognition helps customers analyze complex data stores, reveal actionable insights, and identify and automate optimal responses. We enable organizations to adapt to a changing digital landscape with AI capabilities that increase the production value of assets, maximize workforce potential, retain tribal knowledge, and protect infrastructure from cyber threats.

Contact SparkCognition today at info@sparkcognition.com