

Best Achievement in Operational Excellence to Deliver Digital Transformation

Using Artificial Intelligence to Prevent Stuck Pipe and Save Nearly \$30 Million in Costs



Problem

Non-Productive Time (NPT) is a critical problem facing the oil and gas industry, and stuck pipe incidents, in which the drill string cannot be pulled out of a borehole, account for up to 30% of NPT, costing the industry hundreds of millions of dollars each year. A large national oil company in the Middle East estimates it incurs up to \$30 Million in annual costs on stuck pipe events alone. Traditional responses to stuck pipe events are reactive and frequently ineffective, resulting in unplanned downtime, lost revenue, potential damage to equipment, and safety concerns for maintenance personnel.

Solution

To solve this problem, SparkCognition took an ML-based modeling approach. Predictive analytics used ML algorithms to select real-time surface parameters collected from operational drilling rigs. These parameters were then used to build a baseline operating model. The model was used to analyze surface parameters in real time, identifying risky deviations from established norms. These anomalous values indicated conditions likely to precede an impending stuck pipe event, tight hole, or other NPT impacting event.

Not only did this technique enable monitoring of the overall health of the drilling program, it also gave engineers and crews more time to address and prevent the impending stuck pipe event from occurring. An additional benefit of this ML-based solution is that it continuously analyzes real-time performance data, enabling even greater AI-based insights over time.



About SparkCognition

SparkCognition's award-winning AI solutions allow organizations to predict future outcomes, optimize processes, and prevent cyberattacks. They partner with the world's industry leaders to analyze, optimize, and learn from data, augment human intelligence, drive profitable growth, and achieve operational excellence.



Identify Anomalies



Results

By deploying its predictive analytics solution across the drilling operator's wells, SparkCognition detected 96% of stuck pipe events with an average of two hours forewarning. This ultimately prevented downtime and potential damage to equipment, saving the operator up to \$30 Million each year. To learn more about how SparkCognition's AI solutions can unlock the power in your data, visit www.sparkcognition.com.



STUCK PIPE EVENTS

96% of stuck pipe events were identified in advance



STUCK PIPE EVENTS

Account for up to 30% of Non-Productive Time (NPT)

Contact SparkCognition today at info@sparkcognition.com

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