

AI-Based Operations Scheduler Optimizes Maintenance, Saves \$200M

AI enabled this mining company to mitigate false alarms, make intelligent recommendations from a mountain of sensor data, and end an inefficient haul cycle.




Too Much Data, Too Many False Alarms

Data was the problem for this mining company – their fleet of haul trucks was producing more than their current system could effectively process. With 250 sensors on each truck, both false alarms and sensor data were pouring in. Additionally, their maintenance cycle was too short, leading to unnecessary costs and wasted resources.

To combat these problems, the company needed an automated operations scheduler to analyze maintenance data and predict possible failures in their hauling fleet. It would also give them intelligent guidance and prioritized action recommendations to keep trucks in good repair while weeding out false critical alerts.

AI Reduces Repair Costs by 50%

By utilizing an AI-based, ML-enhanced solution, this mining company optimized their engine maintenance cycle. This allowed them to:



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Drastically reduce the number of false critical alarms.
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Lengthen oil change timespans, saving time, resources, and cash.
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Actively predict which engines needed repairs and when, halving engine replacement costs.

All told, this allowed them to trim over \$200 million in operational expenses.

Predictive Analytics and Prioritized Actions Improve Truck Maintenance

To create an automated predictive maintenance scheduler and decision optimization tool, AI and ML algorithms were used to combine sensor and GPS data with the trucks' own operational and alarm data. This – along with expert input and some additional AI-powered analytics – led to greater accuracy in predicting engine failures, which saved millions of dollars in lost time and operational interruptions. It also highlighted sub-par areas in the haul cycle and determined the fundamental causes and delivered intelligent guidance towards possible resolutions.

False criticals in the alert system were another time- and money-wasting operations issue. Using a five-category filtering system, alerts were correctly prioritized, rooting out the many false alarms and freeing up additional resources.



Maintenance Optimization Enhances Safety and Productivity

With these changes in place, this company moved to a 'smarter instead of harder' maintenance model. Not only were operations more time and resource efficient, the work environment became safer and less prone to interruption. Rather than chasing down false alarms, leaders could prioritize tasks that actually needed to be done. Thanks to AI-powered smart recommendations and ML's predictive analytics, they recouped an impressive \$200 million in repair and maintenance costs.

