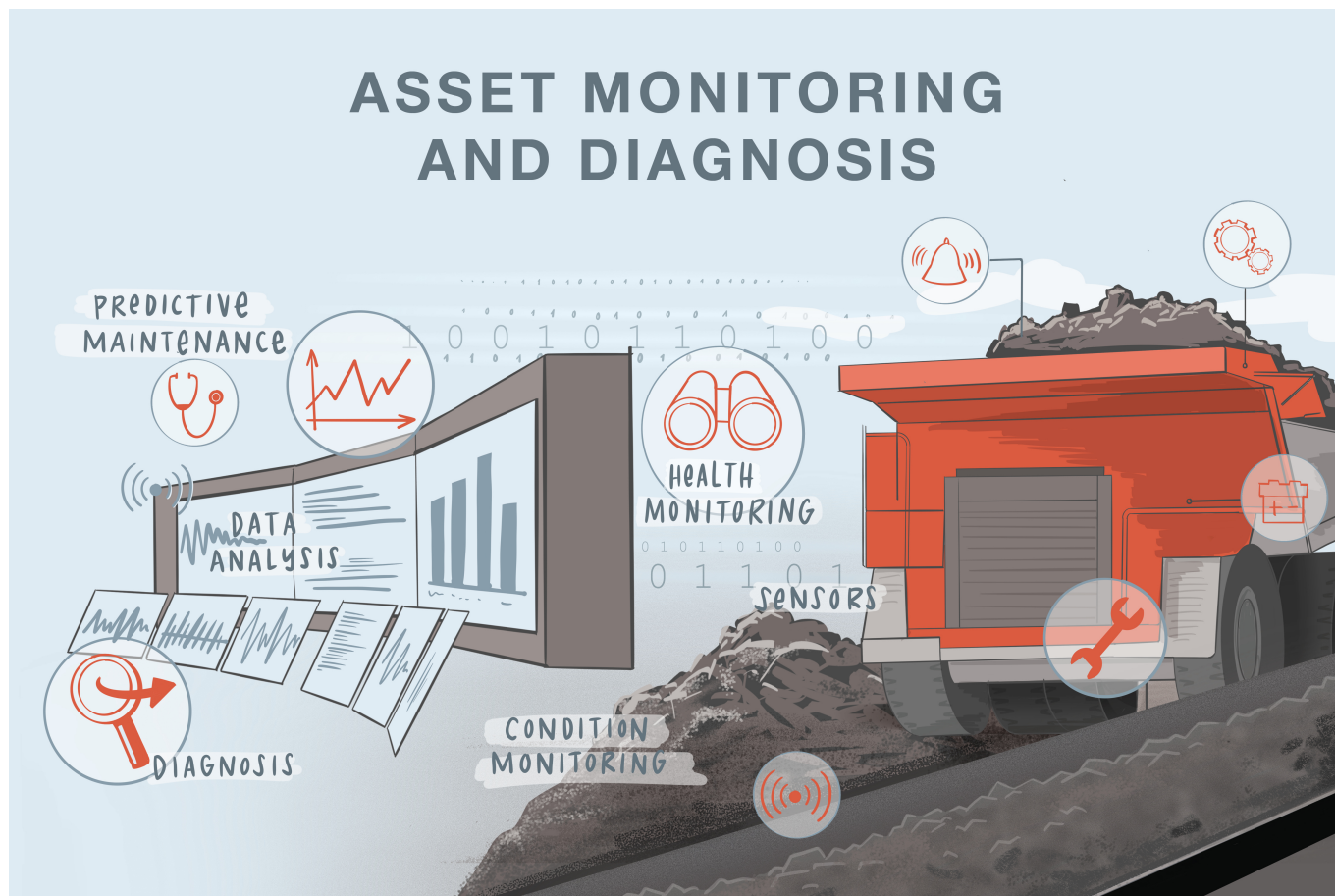


Asset Monitoring and Diagnosis



In the mining industry, efficient asset monitoring is critical for reducing operational costs and maximizing productivity. Our research focuses on developing advanced condition monitoring and diagnostic systems for assets, vehicles, and mining machinery. By leveraging real-time data analysis and machine learning algorithms, we can implement predictive maintenance strategies that identify potential failures before they occur, ensuring the longevity and reliability of critical equipment.

A key aspect of our approach is monitoring the structural integrity of materials, such as steel, under mechanical stress. Using advanced sensor technologies, we can detect early signs of fatigue, deformation, or cracks, providing essential insights into asset health. This capability is particularly valuable for mining applications, where equipment operates under extreme conditions, making proactive maintenance crucial.

Furthermore, we apply condition monitoring to key components of mining machines, such as motors, bearings, and hydraulic systems, predicting part wear and enabling timely interventions. This minimizes unexpected downtime, reduces repair costs, and improves the overall operational efficiency of mining sites.

Through our innovative asset monitoring and diagnostic solutions, we are advancing the field of industrial maintenance in mining. Our work enhances equipment reliability, improves safety, and optimizes resource allocation, ultimately driving the industry towards more sustainable and efficient practices.

Topics and current projects:

- Microcrack detection in steel structures subjected to fatigue stress using acoustic emission analysis ([AKUSTAHL](#))

Completed projects:

- Condition monitoring of mining machines ([BCMS](#))
- Condition monitoring of the monorail hanging rail and monitoring of the energy transmission systems in underground mining ([HEETII](#))
- Monitoring of chains under mechanical load and deformation ([i-MaSS](#))
- Monitoring the mechanical load on the arm of mining machines ([TS4.0](#))

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