

Special Issue

Mine Management Optimization in the Era of AI and Advanced Analytics

Message from the Guest Editors

The mining industry is undergoing a profound transformation driven by artificial intelligence (AI) and advanced analytics. This Special Issue explores how these technologies are reshaping mine management across the entire value chain, ranging from geological exploration and resource estimation to mine planning, operations, mineral processing, and mine waste management. With the rapid growth of digitalization, mining companies must adopt data-driven decision-making, real-time optimization, and predictive analytics to enhance efficiency, sustainability, and safety. Case studies on successful implementations and experimental applications will be particularly valuable, providing insights into overcoming barriers to adoption. The focus is on practical, scalable, and innovative solutions that drive operational excellence, reduce costs, and improve sustainability. Given the need for rapid adoption, contributions highlighting agile deployment, iterative experimentation, and lessons learned in AI-driven mine management will be prioritized.

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