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Mining performance management applying data analytics and artificial intelligence methodologies

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In mining industry, efficient and cost effective project development is critical to be succeeded since it is a long term business and also because of the global economic concerns need new approaches more than before. Projects are depending on new investment decisions nowadays, are in terms of innovative technology for mining applications and performance management. One of the serious tasks faced by observing and monitoring methodologies to ally data science into detailed engineering applying scientific hypothesis-testing approach, essentially not only optimizing the algorithms but also generating new hypothesis to monitor and to improve the efficiency. Modern wireless based management systems and applications for mining equipment fleets are capable of collecting vast amounts of equipment health and mining performance data. However, when performance and machine health deviates from desired target levels, it can sometimes be difficult to determine the root cause. This is because data relating to the operating environment or maintenance actions taken often reside in different data bases, applying different fields including database design, statistics, pattern recognition, machine learning, and data visualization. This "silo" approach to data often inhibits the extent to which evidence-based root causes can be determined and generate cost modeling in advance due to actual. These study hypotheses that there is significant value to be had by integrating data from different sources and using this to determine and manage root cause of performance and machine health problems in advance. It aims to demonstrate the potential for value by undertaking a number of case studies using data collected across a number of Western Australian mining operations.

Biography

Burcin Ozturk Demirhanoz has been in and professionally in mining and machinery industry more than 12 years in Europe and in Australia. She has completed her BSc, Mining Engineering (ITU, Istanbul) and MEng, Mining Engineering, Mine Management and also Business Administration (UNSW, Sydney). She is currently working as a Principal Mining Applications and Performance Engineer at WesTrac CAT and leading mining applications performance optimization projects for best practices at Western Australia region for some of the biggest mining companies in the world. She is also Six Sigma trained, Black Belt and Project Manager qualified. Her industry research interest are mining performance analysis and modelling applying AI (Artificial Intelligence) methodologies within data analytics and machine learning.

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