

Maintenance through Data Science: A Summary of Work to Date



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Since its inception in 2019, the Centre for Transforming Maintenance through Data Science (CTMTDS), a multidisciplinary team of engineers, computer scientists, mathematicians, statisticians, and experts in organisational behaviour, has worked with key enterprises in the mining industry to address challenging problems in maintenance using data science.

In collaboration with the partners, the Centre has developed several tools, processes, and approaches to solve challenges in maintenance, including:

- Technical language processing tools to extract information from maintenance work orders;
- The Data Fit Organisation (DFO) tool for assessing and understanding the roles and capabilities along a data workflow;
- Bespoke tools and methods for optimising shutdown scheduling;
- Advanced methods for assessing asset reliability and degradation when data are incomplete;
- Data-driven methods - Transforming Maintenance through Data Science: A Summary of Work to Date labelling process plant event data, compressing streamed sensor data, and variable selection for prediction from streamed sensor data; and
- DRAT, a web-based tool to assess the risk of releasing data.

In this presentation, the Centre Director will discuss the advances made by the Centre in these areas, focussing on how the solutions are driven by maintenance problems from the mining industry, and the barriers to implementing our solutions in industry, both from a technical and sociological perspective.