

Fast and Accurate Industrial Reliability Predications from Data Mining and AI Methods

MURALI KRISHNAMOORTHY¹ and MARCO BONATO²

¹Valeo India Limited, Chennai, India.
E-mail: murali.krishnamoorthy @valeo.com

²Valeo Thermal Systems, La Verrière, France.
E-mail:marco.bonato@valeo.com

The accuracy of reliability predictions of industrial components is a key element for product development in modern industrial processes. The main goal of this work is to show by concrete examples how a Data Mining strategy can support, improve and accelerate the predictive reliability approach. The agility of such approach requires new and complementary competences needed for implementing state-of-the art techniques.

Data Mining is the process of generating insights in large data sets involving methods at the intersection of data science (i.e. artificial intelligence), statistics, and database systems. Machine Learning or Deep Learning algorithms or models can be used in order to manage high volume of data in a short amount of time. Natural Language Processing can be applied to knowledge extraction from unstructured databases. Thanks to that, even dataset built from complex non-standardized documentation can become an asset and can contribute to predictive reliability assessment.

This paper highlights several examples from the automotive industry dealing with Data Mining and Predictive Reliability. Indeed, by making such approach popular and “easy to use” would favor its deployment and success. It will show also how these complex and mathematical approaches can be shared within a worldwide company, distributed to all contributors to project development and be successfully deployed.

Keywords: Reliability, Data Mining, Natural Language Processing, Data Science, Machine Learning.

References

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