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Physics-Informing AI for Predictive Maintenance

For optimizing the maintenance strategy of a production environment, it is of interest to learn from trained predictive models about discrepancies between its predictions and the solutions provided by the available physical knowledge base. The AI of small corrections [1] can be integrated simpler in the existing domain knowledge and therefore leads to a 'physical explainability' facilitating the optimization of the maintenance strategies.

[1] Fischer, Lukas, Lisa Ehrlinger, Verena Geist, Rudolf Ramler, Florian Sobieczky, Werner Zellinger, David Brunner, Mohit Kumar, and Bernhard Moser. 2021. "AI System Engineering—Key Challenges and Lessons Learned" Machine Learning and Knowledge Extraction 3, no. 1: 56-83, Sect. 5.4, <https://doi.org/10.3390/make3010004>