# Article information:

Recurrent neural networks for real-time prediction of TBM operating parameters - ScienceDirect  
<https://www.sciencedirect.com/science/article/pii/S0926580518304618>

# Article summary:

1. Recurrent neural networks (RNNs) are used to develop the real-time prediction of TBM operating parameters.

2. The proposed three kinds of RNN-based predictors can provide accurate prediction values of some important TBM operating parameters during next period.

3. The RNN-based predictors outperform the classical regression models for the real-time prediction of TBM operating parameters.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article “Recurrent Neural Networks for Real-Time Prediction of TBM Operating Parameters” is a well-written and informative piece that provides an overview of how recurrent neural networks (RNNs) can be used to predict tunnel boring machine (TBM) operating parameters in real time. The article is written in a clear and concise manner, making it easy to understand even for readers with limited knowledge on the subject matter.

The article is based on research conducted by the authors, which makes it reliable and trustworthy as they have provided evidence to support their claims. Furthermore, the authors have provided a comparison between their proposed RNN-based predictors and several classical regression models, which further strengthens their argument that RNNs are more suitable for predicting TBM operating parameters in real time than traditional methods.

However, there are some potential biases in the article that should be noted. For example, while the authors have discussed various methods for predicting TBM load such as empirical methods, rock-soil mechanics methods and numerical simulation methods, they have not explored any counterarguments or alternative approaches that could be used instead of RNNs for this purpose. Additionally, while the authors have compared their proposed RNN-based predictors with several classical regression models, they have not discussed any possible risks associated with using these models or presented both sides equally when discussing their advantages and disadvantages.

In conclusion, while this article provides an informative overview on how recurrent neural networks can be used to predict tunnel boring machine operating parameters in real time, there are some potential biases that should be noted when assessing its trustworthiness and reliability.

# Topics for further research:

* Alternative approaches for predicting TBM load
* Risks associated with classical regression models
* Advantages and disadvantages of RNNs
* Empirical methods for predicting TBM load
* Rock-soil mechanics methods for predicting TBM load
* Numerical simulation methods for predicting TBM load

# Report location:

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