# Article information:

基于一维卷积神经网络的机电作动器故障诊断 - 中国知网
[https://kns.cnki.net/kcms2/article/abstract?v=LP6\_FsDEj27DEfqMKHbNHep-4Dxo5oLbM\_oY2de6TV1KJ0qnxjG007MLSxUwSVivsCXhMyTfN34jVBADufqmqrJhDVebkXioZHGUNR3wekJV2VeEFBsFfNywxudQo5Op=NZKPT](https://kns.cnki.net/kcms2/article/abstract?v=LP6_FsDEj27DEfqMKHbNHep-4Dxo5oLbM_oY2de6TV1KJ0qnxjG007MLSxUwSVivsCXhMyTfN34jVBADufqmqrJhDVebkXioZHGUNR3wekJV2VeEFBsFfNywxudQo5Op&uniplatform=NZKPT)

# Article summary:

1. This article proposes a new intelligent fault diagnosis method for electromechanical actuators based on one-dimensional convolutional neural networks (1DCNN).

2. The proposed method combines feature extraction and classification into one process, using overlapping sampling to preprocess normal and faulty signals from direct-drive electromechanical actuators.

3. Experiments show that the proposed method can effectively diagnose faults in electromechanical actuators with an accuracy of around 98%, and has good robustness and generalization ability under different levels of white noise.

# 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 is generally reliable and trustworthy, as it provides detailed information about the proposed 1DCNN-based fault diagnosis method for electromechanical actuators, including its design, implementation, and experimental results. The authors also provide references to related works in the field, which further adds to the credibility of their claims. Furthermore, the article does not appear to be biased or promotional in any way; instead, it presents both sides of the argument equally by providing a comprehensive overview of the advantages and limitations of the proposed approach.

However, there are some points that could be improved upon. For example, while the authors provide evidence for their claims regarding the effectiveness of their approach in terms of accuracy and robustness under different levels of white noise, they do not explore other possible risks associated with its use such as potential overfitting or data leakage issues. Additionally, while they discuss some potential limitations such as computational complexity and scalability issues, they do not provide any suggestions on how these issues could be addressed in future work.

# Topics for further research:

* Overfitting in 1DCNN-based fault diagnosis
* Data leakage in 1DCNN-based fault diagnosis
* Scalability of 1DCNN-based fault diagnosis
* Mitigation of computational complexity in 1DCNN-based fault diagnosis
* Robustness of 1DCNN-based fault diagnosis under white noise
* Advantages of 1DCNN-based fault diagnosis

# Report location:

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