# Article information:

A New Data-Driven Model-Free Adaptive Control for Discrete-Time Nonlinear Systems | IEEE Journals & Magazine | IEEE Xplore  
<https://ieeexplore.ieee.org/document/8822668>

# Article summary:

1. A new model-free adaptive control is proposed for discrete-time nonlinear systems by establishing a novel dynamic linearized model and introducing the idea of internal model control.

2. The proposed model-free adaptive control reduces the required parameters from six in the existing model-free adaptive control to four in the new model-free adaptive control, with all parameters having clear physical significance.

3. Simulation results for three complicated nonlinear systems show that the proposed model-free adaptive control is superior to the existing model-free adaptive control.

# Article rating:

Appears moderately imbalanced: The article provides some useful information, but is missing several important points or pieces of evidence that would be required to present the discussed topics in a balanced and reliable way. You are encouraged to seek a more balanced perspective on the presented issues by exploring the provided research topics and looking at different information sources.

# Article analysis:

The article provides a detailed overview of a new data-driven, model-free adaptive control for discrete-time nonlinear systems, and presents simulation results that demonstrate its superiority over existing methods. The article is well written and provides an adequate amount of detail on the proposed method and its advantages over existing methods. However, there are some potential biases and missing points of consideration that should be noted when evaluating this article.

First, it should be noted that the article does not provide any evidence or discussion regarding possible risks associated with using this method, such as potential instability or other unforeseen consequences. Additionally, while the article does discuss some of the advantages of this method over existing methods, it does not provide an equal amount of detail on potential drawbacks or limitations of this method compared to existing methods. Furthermore, while the authors do provide some discussion on uncertainties and disturbances in the system, they do not explore counterarguments or alternative solutions to these issues. Finally, it should also be noted that while this article does present a promising solution to controlling discrete-time nonlinear systems, it may be overly promotional in nature as it does not adequately explore other potential solutions or compare them to their own proposed solution.

In conclusion, while this article provides an interesting solution to controlling discrete-time nonlinear systems and presents convincing evidence for its effectiveness compared to existing methods, there are still some potential biases and missing points of consideration that should be taken into account when evaluating its trustworthiness and reliability.

# Topics for further research:

* Discrete-time nonlinear systems control
* Model-free adaptive control
* Potential risks of model-free adaptive control
* Limitations of model-free adaptive control
* Alternative solutions to uncertainties and disturbances
* Comparison of model-free adaptive control to existing methods

# Report location:

<https://www.fullpicture.app/item/57692ee2bf36aecc9446d10817ad63de>