# Artificial Neural Networks without Layering Concept

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## ABSTRACT

We present the basic abstract of the newly obtained results on class of non-layered artificial neural networks.

## INTRODUCTION

Artificial neural networks is a well-known concept and solution [1-3], however due to the lack of performance they are less productive for practical approach [4] and mainly are focused on artificial intelligence [5].

## MODEL

We define the prediction function as:

$$f(x)=\frac{1}{x+1},$$

which is decreasing.

Meanwhile the training sigmoid function is defined as well:

$$g(x)=\frac{1}{1+e^{-x}},$$

which is strongly increasing.

Both functions are defined on the set of the range [0, 1] or [1, 0] with respect to probability.

## ALGORITHM

We present the algorithm of training and prediction during input interaction:

1. Find the set of feasible set in model using machine learning algorithm and function *f(x)* which can be presented as a binary tree.
2. Compute the prediction.
3. Get the input for the given prediction.
4. Train the model with the newly predicted fact using sigmoid function *g(x)*.
5. Request the new input.
6. If input is empty, then halt.
7. Return to step 1 for the input from step 6.

## CONCLUSION

We have presented the evolutionary and mainly performing model for artificial intelligence and machine learning.

## REFERENCES


1. Wu, Y. C., & Feng, J. W. (2018). Development and application of artificial neural network. *Wireless Personal Communications*, *102*, 1645-1656.

2. Dongare, A. D., Kharde, R. R., & Kachare, A. D. (2012). Introduction to artificial neural network. *International Journal of Engineering and Innovative Technology (IJEIT)*, *2*(1), 189-194.

3. Abiodun, O. I., Jantan, A., Omolara, A. E., Dada, K. V., Mohamed, N. A., & Arshad, H. (2018). State-of-the-art in artificial neural network applications: A survey. *Heliyon*, *4*(11).

4. Holmes, J., Sacchi, L., & Bellazzi, R. (2004). Artificial intelligence in medicine. *Ann R Coll Surg Engl*, *86*, 334-8.

5. Jiang, Y., Li, X., Luo, H., Yin, S., & Kaynak, O. (2022). Quo vadis artificial intelligence?. *Discover Artificial Intelligence*, *2*(1), 4.