

# Review of: "The functional unit of neural circuits and its relations to eventual sentience of artificial intelligence systems"

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Potential competing interests: No potential competing interests to declare.

The article is focused on a very interesting and prominent topic of functional units forming neuronal circuits in natural and artificial neural networks and probably playing key roles in pattern perception, memorization, and imagination. According to the authors' opinion, the combination of 'threshold' logical elements and the feedback control loops leads to similar effects of pattern recognition in biological and artificial networks.

As a recommendation for the future development of the research we would like to mention a couple of items:

1. We guess that the authors need to give a more detailed definition of what they understand as 'consciousness' and 'self-awareness', first of all, from the functional point of view: how we can conclude objectively, based on the proposed math model, that one can observe the elements of consciousness in a given ANN.
2. It would be interesting to get the authors' comments if the linear model of perceptron (Fig.2) which is used in the article is pretty enough to provide the high quality of the pattern imagination in the sense discussed in the article. Some particular examples of such applications could work very well.