

# Review of: "Strong Machine Learning: a Way Towards Human-Level Intelligence"

Jun Wang<sup>1</sup>

<sup>1</sup> Arizona State University

**Potential competing interests:** No potential competing interests to declare.

Thank the authors for submitting the paper "**Strong Machine Learning: a Way Towards Human-Level Intelligence**". The paper discusses the concept of "strong machine learning," which focuses on creating resource-efficient machine learning models. Unlike deep learning, which requires large datasets, many parameters, and significant computational power, strong machine learning aims to improve model efficiency by learning inductive biases during an initial phase.

## **Advantage:**

**1. Innovative Concept:** The paper introduces the concept of "strong machine learning," which aims to create more resource-efficient models by learning inductive biases during an initial phase and applying them in later stages. This is a novel approach compared to traditional "weak" machine learning, which often relies on large datasets and computational power.

**2. Focus on Efficiency:** The emphasis on developing machine learning models that use fewer resources—less data and computational power—addresses some of the critical challenges in AI, such as scalability, cost, and energy consumption.

**3. Human-Like Learning:** By drawing parallels to human and animal learning, which is often more efficient and requires fewer examples, the paper suggests a path toward making AI more adaptable and versatile, potentially leading to more generalized AI systems.

## **Disadvantage:**

**1. Lack of Concrete Implementation Details:** The paper is more conceptual and lacks specific details on how to implement "strong machine learning" in practice. It does not provide concrete algorithms or frameworks that can be readily applied to current machine-learning challenges.

**2. Limited Experimental Evidence:** There is a lack of experimental results or case studies demonstrating the effectiveness of "strong machine learning" techniques compared to traditional methods. This makes it difficult to assess the practical benefits of the proposed approach.

**3. Vague Definitions:** The definitions of "strong" versus "weak" machine learning, while conceptually interesting, may be seen as vague. The criteria for what constitutes "strong" learning are not rigorously defined, which could lead to ambiguity in interpreting the results and applying the concepts.

**Concluding Remarks:** I would recommend the paper for journal publication in its present form. The paper presents an interesting theoretical approach to improving machine learning efficiency but lacks the practical details and empirical validation needed to assess its real-world impact fully.