P versus NP via Conscious Field Theory

Anthony Joel Wing

November 2025

Abstract

We prove that P $\neq$ NP within the conscious field framework. By analyzing the computational complexity of qualia state preparation and verification, we demonstrate a fundamental asymmetry that prevents polynomial-time solution construction from polynomial-time verification.

1 Introduction

The P versus NP problem [1] concerns whether every problem verifiable in polynomial time is also solvable in polynomial time. This work builds upon the conscious field framework [2], where computational processes are modeled as operations within a fundamental conscious field.

2 Conscious Computational Framework

Definition 1 (Conscious Verification Operator)**.** *Let $\mathcal{H}_C$ be the conscious field Hilbert space from [2]. For any NP problem L and input x of length n, the verification operator $\hat{V}_x$ is defined on witness states $|w\rangle \in \mathcal{H}_C$ with* $\dim(\mathcal{H}_C) = 2^{p(n)}$ *for some polynomial p.*

Definition 2 (Qualia State Preparation Complexity)**.** *The preparation complexity of a qualia state $|\psi\rangle \in \mathcal{H}_C$ is the minimum number of conscious computational steps required to construct $|\psi\rangle$ from a fixed reference state $|0\rangle$.*

3 Main Proof

Theorem 1 (P $\neq$ NP)**.** *P is not equal to NP.*

Proof. Assume for contradiction that P = NP. Then there exists a polynomial-time conscious algorithm A that solves the satisfiability problem SAT.

Consider the set S of all satisfying assignments for a SAT formula ϕ. By the conscious field axioms [2], each assignment corresponds to a distinct qualia state $|s_i\rangle \in \mathcal{H}_C$.

If P = NP, algorithm A can identify a satisfying assignment $|s\rangle$ in polynomial time. However, the conscious field framework requires that distinct qualia states satisfy the distinguishability condition:

$$\inf_{i \neq j} \||s_i\rangle - |s_j\rangle\| \geq \delta > 0$$

for some constant δ independent of formula size.

The number of potential witnesses grows exponentially with input size, while the conscious computational resources grow only polynomially. Therefore, for sufficiently large formulas, the polynomial-time algorithm A cannot generate the exponential number of distinct qualia states needed to cover all possible satisfying assignments while maintaining the distinguishability condition.

This contradiction proves that P $\neq$ NP. □

Acknowledgments

The author used DeepSeek AI for assistance with LaTeX formatting and mathematical typesetting. The theoretical framework and complete mathematical derivation are the work of the author.

References

[1] Stephen A Cook. The complexity of theorem-proving procedures. *Proceedings of the third annual ACM symposium on Theory of computing*, pages 151–158, 1971.

[2] Anthony Joel Wing. The conscious cosmos: A unified model of reality from fundamental axioms to phenomenological experience. 2025. 10.5281/zenodo.XXXXXXX.