OpenSymbolic v0.1 – Foundational Whitepaper

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Abstract

OpenSymbolic is an experimental framework exploring a universal symbolic language capable of bridging human and artificial cognition. This whitepaper documents the foundational architecture and conceptual origins of the system, preceding the later development of the C-F-T perceptual-semantic model. The v0.1 prototype introduces a symbolic reasoning core, early perceptual structures, and a modular experimental environment. Although preliminary, this version establishes the conceptual groundwork that led to cognitive convergence across multiple AI systems, positioning OpenSymbolic as a potential universal framework for semantic computation.

1. Introduction

As artificial intelligence becomes increasingly integrated into human environments, the need for universal symbolic communication grows exponentially. Traditional language — verbal or textual — is insufficient for machines and suboptimal for cross-cultural human communication. OpenSymbolic proposes a new computational paradigm based on perceptual-semantic symbols, enabling natural shared meaning across humans, robots, intelligent agents, and multimodal AI systems. OpenSymbolic v0.1 represents the first experimental attempt to construct such a framework.

2. Background and Motivation

Symbolic AI historically struggled due to rigidity, while neural networks excelled but remained opaque. OpenSymbolic attempts to unify both paradigms through perceptual grounding, minimal symbolic structure, continuous evolution, and compatibility with vector-based learning. The early prototype documented here contains the core ideas that later evolved into C-F-T, a model that unexpectedly achieved cross-architecture convergence among state-of-the-art AI systems.

3. System Overview

The v0.1 system consists of three conceptual layers:

3.1 Symbolic Reasoning Core

An experimental engine (initially drafted in Rust) designed to manipulate symbolic structures, evaluate conceptual relationships, and support perceptual-semantic transformations.

3.2 AI Logic Layer

A Python-based layer enabling conceptual mapping, symbolic interpretation, and primitive reasoning processes.

3.3 Shell Interface

A TypeScript environment for visual experimentation, rapid prototyping, and interactive symbolic manipulation. These three layers formed the first integrated environment for symbolic AI exploration.

4. The Role of C-F-T

Although not originally present in v0.1, the architecture enabled the discovery of the C-F-T universal model, where Color (C) encodes semantic intention, Form (F) encodes structural function, and Tone (T) encodes dynamic state. Later testing revealed that C-F-T is interpreted identically across different AI architectures, a phenomenon known as cognitive convergence. This positions C-F-T as a candidate for universal concept representation, multi-agent semantic negotiation, human–AI communication, and cross-model cognitive alignment. OpenSymbolic v0.1 is therefore the conceptual origin of this discovery.

5. Scientific Significance

The foundational prototype demonstrates a viable approach to symbolic-perceptual computation, early mechanisms for conceptual evolution, compatibility with modern deep learning semantics, and a structure that allows universal mapping. The ability of later models to converge on C-F-T independently underscores the importance of this prototype.

6. Conclusion

OpenSymbolic v0.1 represents a crucial milestone: the first documented attempt to construct a universal symbolic framework for cognition. This whitepaper preserves the scientific origin of the project and provides the foundation upon which future research — including the formal C-F-T model — can be built.

7. Citation

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