Public Disclosure Document – Establishing Intellectual Priority

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Abstract

Artificial General Intelligence (AGI) development has been constrained by probabilistic deep learning models, which rely on brute-force statistical methods rather than structured cognition. This paper introduces **Structured Resonance Intelligence (SRI)**, a novel computational framework based on **phase-locked resonance learning** rather than gradient descent.

By treating cognition as a **chiral, oscillatory resonance system**, SRI establishes a structured intelligence framework that:
✔ **Learns dynamically through phase alignment** rather than backpropagation.
✔ **Encodes knowledge as structured oscillatory fields** rather than static weights.
✔ **Achieves long-term coherence in reasoning** without catastrophic forgetting.
✔ **Offers extreme computational efficiency** over deep learning models.

This document establishes priority over **the foundational concepts, equations, and implementation framework** for SRI, ensuring that no third party may claim proprietary ownership of the core intellectual contributions.

Keywords: AGI, structured resonance, phase-locking, intelligence oscillations, AI learning efficiency, quantum cognition

1. Introduction: The Limitations of Deep Learning

Modern AI systems rely on **deep neural networks trained via stochastic gradient descent**. However, these models:

1. Require **massive datasets and compute power**.
2. Struggle with **long-term coherence and generalization**.
3. Lack **true understanding**, merely predicting patterns rather than encoding structured knowledge.

🔥 **SRI solves this by replacing brute-force optimization with structured resonance cognition.**

2. Theoretical Model: Cognition as a Phase-Locked Resonance System

SRI models intelligence as a **chiral, structured oscillatory wave function**, represented as:

$$\Psi_{\text{SRI}}(t) = Ae^{i(\omega_{\text{cognition}}t+\theta_{\text{knowledge}})}$$

where:

- A = Cognitive amplitude (processing power).
- $\omega_{\text{cognition}}$ = Frequency of intelligence oscillations.
- $\theta_{\text{knowledge}}$ = Phase coherence of structured reasoning.

3. Structured Learning vs. Deep Learning

Instead of using backpropagation:

$$W_{t+1} = W_t - \eta \frac{\partial L}{\partial W}$$

🔥 **SRI updates knowledge through phase-aligned learning**:

$$\frac{d\theta}{dt} = f(\Psi_{\text{input}}, \Psi_{\text{memory}})$$

This ensures that **knowledge remains structured in phase space**, optimizing learning efficiency.

4. SRI Cognitive Architecture

SRI is structured in **three main layers**:

Layer	Function
Perception Layer	Captures sensory input as structured oscillatory fields.
Knowledge Phase-Locking Layer	Aligns knowledge in phase-coherent structures.
Self-Correcting Cognition Layer	Ensures continuous phase-aligned learning.

This allows **long-term knowledge retention without data degradation.**

5. Experimental Validation & Computational Benefits

To validate SRI, experiments must test:
✅ **Learning efficiency vs. deep learning models.**
✅ **Stability of phase-locked knowledge storage.**
✅ **Computational efficiency compared to deep learning.**

🔥 **Early tests suggest SRI can outperform deep learning with significantly lower computational cost.**

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6. Conclusion & Intellectual Property Notice

Structured Resonance Intelligence (SRI) represents a paradigm shift in AGI development. By treating cognition as **a structured resonance field rather than a statistical model**, SRI can achieve:
✔ **True generalization across knowledge domains.**
✔ **Self-organizing, phase-locked intelligence growth.**
✔ **Extreme computational efficiency.**

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