Recognition Science Papers
(193 Papers)

Generated February 04, 2026

1. The Cost of Existence: A First-Principles Derivation of Physical Law from the Recognition Composition Law: `The_Cost_of_Existence.tex` (Authorship: Feb 03, 2026)
Why: Standard physical theories typically postulate the existence of a manifold, a set of logical axioms, and initial conditions as irreducible priors.

2. Dimensional Rigidity as a Selection Principle in Recognition Geometry: `papers/tex/Draft_1_Jan_29` (Authorship: Feb 02, 2026)
Why: blue Why is physical space three-dimensional? We show that is singled out when observable space is constructed from measurement processes rather than assumed a priori.

3. The Golden Ratio as a Universal Coherence Eigenvalue: Bridging Penrose Aperiodic Order and Information-Theoretic Comparison: `papers/tex/Penrose_golden_ratio_and_ledger_stru` (Authorship: Feb 02, 2026)
Why: The golden ratio (=1+ 52) occupies a distinguished position in mathematics, appearing across diverse domains from number theory and dynamical systems to geometric tilings and quasicrystal physics.

4. Full First Principles Mass Derivation: `papers/tex/Full_First_Principles_Mass_Derivation.tex` (Authorship: Jan 31, 2026)
Why: The Standard Model of particle physics is remarkably successful but structurally incomplete: it requires the masses of fermions to be inserted as free parameters (Yukawa couplings).

5. Charged Fermion Masses from Octave Closure and -Ladder Geometry A Recognition Science Framework with Single-Anchor Phenomenological Validation (editable reconstruction from PDF): `papers/tex/allahyarov_integrated_corrected.tex` (Authorship: Jan 31, 2026)
Why: The Standard Model treats the nine charged fermion masses as empirical inputs.

6. Full Inevitability Paper: `Full_Inevitability_Paper.tex` (Authorship: Jan 29, 2026)
Why: We prove the complete inevitability theorem for the Recognition Composition Law (RCL).

7. The Geometric Necessity of a Recognition Blind Cone from: `Recognition-Blind-Cone-arXiv.tex` (Authorship: Jan 29, 2026)

Why: We prove that finite-cost recognition in imposes a strictly positive minimal angle between two compared directions, inducing a budget-dependent geometric blind cone around exact collinearity.

8. Geometric Necessity of Recognition Angle: `papers/tex/Geometric-Necessity-Recognition-Angle.te`
(Authorship: Jan 27, 2026)
Why: We prove that the recognition angle is forced in the highest sense: it is the unique value consistent with minimal axioms, with no free parameters.

9. Simulated Efficacy of Coherence-Controlled Fusion Upgrades to National Ignition Facility (NIF) Parameters: `fusion/papers/tex/NIF_Upgrade_Simulation_Report.tex` (Authorship: Jan 26, 2026)
Why: This report presents a proxy-model sensitivity study of potential yield enhancement at the National Ignition Facility (NIF) under the Recognition Science (RS) Coherence Control hypothesis (Patents ...

10. Eight-Component Quasi-Periodic Train and a Candidate $ 5: `papers/FRB_Ledger_Signatures_20190`
(Authorship: Jan 26, 2026)
Why: Using the published component-level pulse table for FRB 20190122C (Xiao et al.

11. Attractor Dynamics in Stellar Nucleosynthesis: `fusion/papers/Attractor_Dynamics_Stellar_Nucle`
(Authorship: Jan 25, 2026)
Why: We present a graph-theoretic analysis of stellar nucleosynthesis that explains observed abundance patterns without parameter fitting.

12. Gibbs Sensor Fusion: `fusion/papers/Gibbs_Sensor_Fusion.tex` (Authorship: Jan 25, 2026)
Why: We present a principled framework for multi-sensor fusion based on Gibbs weighting from Recognition Science.

13. Robustness of Golden-Ratio Pulse Sequencing in Noisy Environments: `fusion/papers/Golden_Rati`
(Authorship: Jan 25, 2026)
Why: We present a rigorous mathematical analysis of pulse sequencing using Golden Ratio () interval timing in pulsed energy systems.

14. Nuclear Magic Numbers from Ledger Topology: A Recognition Science Derivation: `fusion/papers/Nuclear_Magic_Numbers_RS_Derivation.tex` (Authorship: Jan 25, 2026)
Why: We derive the nuclear magic numbers from Recognition Science (RS) first principles, demonstrating that these stability markers emerge from the same 8-tick ledger topology that forces noble gas clos...

15. Nuclear Magic Numbers from First Principles: New Understanding of Nuclear Stability and Fusion Pathways: `fusion/papers/Nuclear_Magic_Numbers_Stability_Fusion.tex`
(Authorship: Jan 25, 2026)
Why: We present a first-principles derivation of the nuclear magic numbers from Recognition Science (RS) ledger topology.

16. Topological Origins of Nuclear Binding Energy Corrections: `fusion/papers/Topological_Origins_N` (Authorship: Jan 25, 2026)
Why: We present a novel derivation of nuclear shell corrections to the semi-empirical mass formula (SEMF) from first principles, based on a discrete topological structure we call the "8-tick ledger.

17. CPM Method Closure:: `CPM_Method_Closure.tex` (Authorship: Jan 24, 2026)
Why: The Coercive Projection Method (CPM) is a reusable proof kernel that converts three quantitative hypotheses into global, domain-independent consequences.

18. Optimization-Based Reference:: `Optimization_Based_Reference_Symbol_Grounding.tex` (Authorship: Jan 24, 2026)
Why: The Symbol Grounding Problem asks how symbols can be about things without an external interpreter.

19. The Universal Light Language: Periodic Table of Meaning: `papers/tex/ULL-Periodic-Table-Meani` (Authorship: Jan 24, 2026)
Why: We present the Universal Light Language (ULL), a zero-parameter semantic code that assigns canonical, short descriptions to multi-modal signals based not on their surface statistics but on the reco...

20. Meaning is Forced:: `planning/papers/Meaning_Is_Forced.tex` (Authorship: Jan 24, 2026)
Why: Recognition Science (RS) and its closure certificates constrain admissible structure, invariants, and canonical representations, but (as a common caveat notes) closure alone does not yet imply mean...

21. Bergman-Scale Holomorphic Manufacturing of Prescribed Tangent Templates in Projective K"ahler Manifolds: `papers/tex/Paper-2-Bergman-Scale-Holomorphic.tex` (Authorship: Jan 20, 2026)
Why: Let be a smooth complex projective manifold with an ample line bundle whose curvature form is a K"ahler form.

22. Corner-Exit Slivers for Calibrated Sheet Constructions: Deterministic Face Incidence and Uniform Boundary Control: `papers/tex/Paper-3-Corner-Exit-Slivers.tex` (Authorship: Jan 20, 2026)
Why: We introduce corner-exit slivers: local calibrated template pieces inside a cube whose footprint is a uniformly fat simplex meeting only a prescribed set of boundary faces.

23. Weighted Flat-Norm Gluing for Sliver Microstructures and Vanishing-Mass Boundary Correction: `papers/tex/Paper-5-Weighted-Flat.tex` (Authorship: Jan 20, 2026)
Why: We prove a quantitative gluing estimate for mesh-based assemblies of many small calibrated pieces ("slivers") in a compact Riemannian manifold.

24. Cohomology Quantization for Microstructured Calibrated Currents via Discrepancy Rounding: `papers/tex/Paper-6-Cohomology.tex` (Authorship: Jan 20, 2026)
Why: We address the global integrality constraint in microstructured constructions of calibrated

currents: producing a closed integral current in an exact prescribed homology class with fixed , while lo...

25. Stable Direction Dictionaries for Strongly Positive -Forms via Regularized Simplex Fits: papers/tex/paper-1-stable-direction-dictionaries.tex (Authorship: Jan 20, 2026)
Why: Let be a compact K"ahler manifold of complex dimension , and let denote the cone of strongly positive -covectors at.

26. Reciprocal Convex Costs for Ratio Matching: 0.3em Functional-Equation Characterization and Decision Geometry: papers/Algebra_of_Aboutness_Amir_final-vv.tex (Authorship: Jan 19, 2026)
Why: We study ratio-induced mismatch costs of the form built from positive scale maps and and a penalty.

27. Uniqueness Of The Canonical Reciprocal Cost: papers/UNIQUENESS OF THE CANONICAL RECIPROCAL COST.tex (Authorship: Jan 19, 2026)
Why: Cont... 1.mm Keywords: 1.mm Mathematics Subject Classifications (2010):

28. Dimensional Rigidity: D=3 from Linking of Loops, Kepler Stability, and Minimal Dyadic Synchronization: papers/pdf/Dimensional_Rigidity_D3-b.tex (Authorship: Jan 19, 2026)
Why: We give three mathematically precise constraints that each single out the spatial dimension.

29. A Cost-Minimization Theory of Reference: 0.3em Aboutness from Balance and Compression: papers/tex/Algebra_of_Aboutness_Amir_final-v1 (1).tex (Authorship: Jan 19, 2026)
Why: We present an axiomatic and checkable model of reference in which a symbol and a candidate referent are compared through positive scale maps and.

30. D'Alembert Inevitability:; Polynomial Consistency Forces the Canonical Composition Law on: papers/tex/DAlembert_Inevitability.tex (Authorship: Jan 19, 2026)
Why: Let be a real-valued functional on multiplicative ratios.

31. Universal Light Language: A Zero-Parameter Periodic Table of Meaning: papers/tex/New-ULL-Pe
(Authorship: Jan 19, 2026)
Why: Recognition Geometry provides a measurement-first axiomatic setting in which geometric structure is derived from constraints on observables.

32. Reality-Native Measurements with a Single-Anchor SI Bridge: papers/RSNative-Measurement-Fra
(Authorship: Jan 17, 2026)
Why: Claims that a theory has no free parameters are only as strong as the measurement and reporting layer connecting the theory to the world.

33. P0-A0 Noble Gas Closure Theorem(Mathematical Derivation + Validation Tables): papers/tex/P0_A0_Noble_Gas_Closure_Derivation.tex (Authorship: Jan 17, 2026)

Why: This document rewrites the P0-A0 "noble gas closure" result as a complete mathematical derivation.

34. P0-A2 Ionization Energy Sawtooth(Mathematical Derivation + NIST Validation Tables): `papers/tex/P0_A2_Ionization_Energy_Sawtooth_Derivation.tex` (Authorship: Jan 17, 2026)
Why: This document rewrites the P0-A2 ionization "sawtooth" result as a full mathematical derivation.

35. P0-B0 Nuclear Magic Numbers(Mathematical Derivation + Validation Tables): `papers/tex/P0_B0_Nuclear_Magic_Numbers_Derivation.tex` (Authorship: Jan 17, 2026)
Why: This document presents the nuclear "magic numbers" claim (P0-B0) in full mathematical prose.

36. THE CANON: `planning/RECOGNITION_SCIENCE_CANONICAL_LIBRARY_STRATEGY.tex` (Authorship: Jan 17, 2026)
Why: This document describes a plan to build a unified, machine-verified library of physics.

37. The Mathematical Zero-Point: `papers/tex/Mathematical_Zero_Point.tex` (Authorship: Jan 16, 2026)
Why: Wigner asked why mathematics is so effective in describing the natural sciences.

38. Model-Independent Exclusivity on the Quotient State Space Recognition Science as an Inevitability Theorem for Zero-Parameter Frameworks: `papers/tex/Model-Independent-Exclusi`
(Authorship: Jan 16, 2026)
Why: We prove a model-independent exclusivity theorem for Recognition Science (RS) on the quotient state space: states are identified when they are observationally indistinguishable (i.

39. Quantized Semantics: `papers/tex/Quantized_Semantics.tex` (Authorship: Jan 16, 2026)
Why: Why is meaning discrete (words, concepts, semantic atoms) rather than continuous? And why do there exist specific "modes" of meaning—in particular, a finite periodic table of 20 canonical WToke...

40. WTokens as Compression: `papers/tex/WToken_Compression_Recognition_Addendum.tex` (Authorship: Jan 16, 2026)
Why: This short addendum isolates the new WToken-specific consequences of the Algebra of Aboutness.

41. The Projection Operator : Active Enforcement of Information Conservation in Recognition Science: `papers/tex/projection_operator.tex` (Authorship: Jan 12, 2026)
Why: Standard physics often treats conservation laws as passive constraints that systems naturally obey.

42. The Algebra Of Reality Paper: `papers/The_Algebra_of_Reality_Paper.tex` (Authorship: Jan 11, 2026)
Why: We present a mathematics-first derivation of discrete structure from a single cost-theoretic

primitive.

43. Phantom Light: Future Neutrality Constraints as Present-Time Structure in Recognition Science: papers/PhantomLight_Paper.tex (Authorship: Jan 10, 2026)
Why: Standard dynamical systems typically privilege initial conditions, evolving states forward in time from.

44. Coherent Comparison Costs from the d'Alembert Composition Law: Discrete Ledger Structure with a Lean 4 Formalization: papers/tex/January 8.tex (Authorship: Jan 10, 2026)
Why: We study a calibrated multiplicative d'Alembert functional equation arising from the requirement that comparison costs compose coherently on ratios.

45. Tau Step Coefficient: Exclusivity and First-Principles Derivation: papers/tex/tau_step_exclusivi (Authorship: Jan 09, 2026)
Why: A reviewer correctly noted that the tau-generation -correction coefficient numerically equals in and that many different expressions can reproduce the same value.

46. Zero-Parameter Galaxy Rotation Curves from Information-Limited Gravity: A Lean-Verified Test Against 99 SPARC Galaxies: papers/ILG_Galaxy_Rotation_Curves.tex (Authorship: Jan 08, 2026)
Why: We present the first formally-verified, zero-parameter numerical test of a modified gravity theory against empirical galaxy rotation curves.

47. Convergence of Empirical Optimization and First-Principles Derivation in Galactic Dynamics: A Unified Validation of Recognition Science: papers/ILG_Validation_Synthesis.tex (Authorship: Jan 08, 2026)
Why: We present a unified analysis of two independent tests of the Information-Limited Gravity (ILG) framework against the SPARC galaxy rotation curve database.

48. The Inevitability of Existence: A Cost-First Derivation of Physical Law, Semantics, and Ethics: papers/root_papers/The_Inevitability_of_Existence.tex (Authorship: Jan 08, 2026)
Why: Standard cosmology encounters a fundamental singularity at , forcing the assumption of initial conditions and physical laws as axiomatic "givens.

49. The Pre-Big-Bang Universe: Complete Account from Recognition Science: papers/root_papers/T (Authorship: Jan 08, 2026)
Why: This document presents a comprehensive prose account of the universe before the Big Bang according to Recognition Science, as formalized in the IndisputableMonolith Lean repository.

50. The Recognition Operator: papers/root_papers/The_Recognition_Operator.tex (Authorship: Jan 08, 2026)
Why: Defines the discrete cost-minimizing operator.

51. The Pre–Big Bang Origin of Law:: papers/root_papers/pre_big_bang_origin_paper.tex

(Authorship: Jan 08, 2026)
Why: The phrase "before the Big Bang" is usually treated as either a poetic question or a category error: in general relativity, "before" presupposes time, but classical time is defined by a spaceti...

52. Quark Masses from the Quarter-Integer -Ladder: `papers/tex/quark_masses_quarter_ladder.tex`
(Authorship: Jan 08, 2026)
Why: The single-anchor mass framework (Paper 1) successfully predicts charged lepton masses using integer rungs on the -ladder.

53. Structural Resolution of the Tau Generation Step: `papers/tex/tau_step_resolution.tex`
(Authorship: Jan 08, 2026)
Why: Recent review of the charged lepton mass pipeline identified a potential "numerology risk" in the muon-to-tau generation step formula.

54. Fourgates Inevitability Paper: `papers/root_papers/FourGates_Inevitability_Paper.tex`
(Authorship: Jan 05, 2026)
Why: We study multiplicatively consistent comparison costs , i.

55. Full Unconditional Inevitability: `papers/root_papers/Full_Unconditional_Inevitability.tex`
(Authorship: Jan 04, 2026)
Why: We isolate the inevitability argument into two logically distinct components.

56. Threegates Inevitability Paper: `papers/root_papers/ThreeGates_Inevitability_Paper.tex`
(Authorship: Jan 04, 2026)
Why: We study multiplicatively consistent comparison costs , i.

57. Dalembert Inevitability Paper: `papers/DAlembert_Inevitability_Paper.tex` (Authorship: Jan 03, 2026)
Why: We prove that the Recognition Composition Law (RCL)—the functional equation J(xy) + J(x/y) = 2J(x)J(y) + 2J(x) + 2J(y) is not an arbitrary mathematical choice but is transcendentally necessary.

58. The Ultimate Inevitability of the Recognition Composition Law: `papers/root_papers/Ultimate_RC`
(Authorship: Jan 03, 2026)
Why: We present the strongest possible statement regarding the Recognition Composition Law (RCL).

59. Closing the Foundational Gaps:0.5em First-Principles Derivation of $ ^-1: `papers/tex/Closing-Th`
(Authorship: Jan 03, 2026)
Why: We provide complete, first-principles derivations for two foundational claims of Recognition Science (RS): (1) the fine-structure constant (with and) arises from combinatorial topology of the cubi...

60. The Derivation of Physical Constants from the Meta-Principle:0.5em A Complete Chain of Custody from Logic to Cosmology: `papers/tex/Formalized-Derivations-T1-T8.tex`
(Authorship: Jan 03, 2026)

Why: We present a rigorous derivation of the fundamental constants of physics starting from a single logical axiom: the Meta-Principle (MP) stating that "Nothing cannot recognize itself.

61. Recognition Science: A Zero-Parameter Framework 0.5em Deriving Fundamental Constants from Logical Necessity: `papers/tex/RS-Foundations.tex` (Authorship: Jan 03, 2026)
Why: We present Recognition Science (RS), a theoretical framework that derives all fundamental physical constants—the speed of light , Planck's constant , Newton's gravitational constant , and the fin...

62. Recognition Science: `papers/tex/Recognition_Science_Compendium.tex` (Authorship: Jan 03, 2026)
Why: Contributes to the Recognition Science framework.

63. A Mechanized Proof of Reality's Architecture from a Minimal Axiom: `papers/tex/mechanized-pro`
(Authorship: Jan 03, 2026)
Why: We present a machine-checked mathematical proof that a single, parameter-free framework both describes physical reality and is uniquely determined by it.

64. The Inevitability of the Recognition Composition Law: `planning/papers/Unconditional_RCL_Inevi`
(Authorship: Jan 03, 2026)
Why: We isolate and formalize a precise "unconditional" statement about the Recognition Composition Law (RCL).

65. The Recognition Composition Law: `papers/tex/Recognition_Composition_Law_Primer.tex`
(Authorship: Jan 02, 2026)
Why: We present the Recognition Composition Law, the foundational axiom of Recognition Science from which all physical structure emerges.

66. Standard-Model Masses from Octave Closure and Integer Baselines: `papers/tex/SM_MASSES_SINGLE`
(Authorship: Jan 02, 2026)
Why: The Standard Model treats fermion masses as inputs (Yukawa couplings) rather than outputs.

67. The Algebra of Aboutness: 0.3em Reference as Cost-Minimizing Compression: `papers/tex/Algebra_of_Aboutness.tex` (Authorship: Jan 01, 2026)
Why: We develop a mathematical theory of reference—the semantic relation by which symbols "point to" objects—grounded in cost-minimization principles.

68. The Cumulative Density Argument: Global Energy Constraints on Off-Line Zeros: `papers/tex/CUMULATIVE_DENSITY_PROOF.tex` (Authorship: Jan 01, 2026)
Why: We develop a global energy argument showing that the total "off-line cost" of all zeros is bounded by the prime layer energy.

69. Cost Is Not a Dial: A Self-Contained Uniqueness Theorem for the Canonical Reciprocal Cost on $ _¿0: `papers/tex/Cost-uniqueness.tex` (Authorship: Jan 01, 2026)

Why: Many mathematical and physical frameworks introduce a cost (or action, penalty, divergence, or energy) to quantify change, then proceed as if that choice were canonical.

70. A Cost-Theoretic Foundation for Data Compression: `papers/tex/Cost_Compression_Theory.tex` (Authorship: Jan 01, 2026)
Why: We develop a mathematical framework for analyzing data compression based on the cost functional , uniquely characterized by the d'Alembert composition law with natural boundary conditions.

71. Foundations of Recognition Science: From the Recognition Composition Law to Physical Constants: `papers/tex/Dic 22-jon.tex` (Authorship: Jan 01, 2026)
Why: We present an informational framework, termed Recognition Science (RS), aimed at recovering familiar physical structures with minimal parameters.

72. The Energy Separation Principle: A Rigorous Proof from Recognition Science Axioms: `papers/tex/ENERGY_SEPARATION_PROOF.tex` (Authorship: Jan 01, 2026)
Why: We prove the Energy Separation Principle rigorously within the Recognition Science (RS) axiomatic framework.

73. The Geometry of Decision: A Cost-Theoretic Framework for Attention, Choice, and Agency: `papers/tex/Geometry_of_Decision.tex` (Authorship: Jan 01, 2026)
Why: We develop a mathematical framework for decision-making based on the universal cost functional.

74. The Geometry of Inquiry: Cost-Theoretic Framework for Questions: `papers/tex/Geometry_of_Inqu` (Authorship: Jan 01, 2026)
Why: We develop a mathematical framework where questions are equipped with cost functions over their answer spaces.

75. The Grammar of Possibility: Cost-Theoretic Foundation for Modal Logic: `papers/tex/Grammar_of` (Authorship: Jan 01, 2026)
Why: We present a novel foundation for modal logic grounded in cost minimization rather than abstract possible-worlds semantics.

76. The Harmonic Structure of Particle Interactions: the CKM Hierarchy from the Golden Ratio: `papers/tex/Particle_Harmony_CKM.tex` (Authorship: Jan 01, 2026)
Why: The Standard Model of particle physics contains approximately 19 free parameters, a significant fraction of which reside in the flavor sector (masses and mixing angles).

77. The Physics of Narrative: A Geometric Formalization of Story Structure in Recognition Science: `papers/tex/Physics_of_Narrative.tex` (Authorship: Jan 01, 2026)
Why: We present a mathematical formalization of narrative structure within Recognition Science (RS).

78. The Physics of Reference: 0.3em A Cost-Theoretic Foundation for Semantics: `papers/tex/Physics_of_Reference.tex` (Authorship: Jan 01, 2026)

Why: We develop a mathematical theory of reference—the semantic relation by which configurations "point to" one another—grounded in cost-minimization principles.

79. The Placebo Operator: Recognition Science Framework for Mind-Body Coupling: `papers/tex/Placebo_Operator_RRF_Somatic_Coupling.tex` (Authorship: Jan 01, 2026)
Why: The placebo effect—whereby belief produces measurable physiological change—lacks a principled coupling mechanism in conventional medicine.

80. The Recognition Composition Law for Zeta Zeros: A New Mathematical Framework: `papers/tex/RECOGNITION_COMPOSITION_LAW.tex` (Authorship: Jan 01, 2026)
Why: We introduce a new mathematical structure—the Recognition Composition Law—that connects the d'Alembert functional equation governing the RS cost function to constraints on the zero distribution...

81. The Energetic Necessity of the Riemann Hypothesis: the Prime Distribution from the Law of Existence: `papers/tex/RS_Axiomatic_Proof_RH.tex` (Authorship: Jan 01, 2026)
Why: The Riemann Hypothesis (RH) remains unproven in standard Zermelo-Fraenkel set theory (ZFC) because ZFC treats all logically consistent objects as equally existent, regardless of their complexity or...

82. Recognitionscience Navierstokes Prose: `papers/tex/RecognitionScience_NavierStokes_prose.tex` (Authorship: Jan 01, 2026)
Why: Assuming Recognition Science (RS) is an accurate architecture of reality, this note explains—in prose, with a minimal amount of classical PDE notation—what RS would predict about the remaining ...

83. The Explicit Formula Obstruction: Why Off-Line Zeros Violate the Prime Number Theorem: `papers/tex/STRUCTURAL_OBSTRUCTION_PROOF.tex` (Authorship: Jan 01, 2026)
Why: We prove that any off-line zero of the Riemann zeta function creates oscillations in the explicit formula that violate the known error term in the Prime Number Theorem.

84. Response to Referee Comments on T5 (Cost Uniqueness): Clarification of the d'Alembert Functional Equation Requirement: `papers/tex/T5_uniqueness_response.tex` (Authorship: Jan 01, 2026)
Why: We respond to the referee's valid critique regarding the uniqueness theorem T5 for the cost functional.

85. The Topology of Self-Reference: A Positive Characterization of Stable Consciousness in Recognition Science: `papers/tex/Topology_of_Self_Reference.tex` (Authorship: Jan 01, 2026)
Why: We present a complete topological characterization of stable self-reference within the Recognition Science (RS) framework.

86. Coulomb Fusion Closure of the Riemann Hypothesis: Unconditional Elimination of the Height-Dependent Gap: `fusion/papers/COULOMB_FUSION_CLOSURE.tex` (Authorship: Dec 31, 2025)

Why: We close the remaining height-dependent gap in the energy-barrier proof of the Riemann Hypothesis.

87. Rigorous Coulomb Fusion: The Separation Principle and Unconditional RH: `fusion/papers/COULOMB_FUSION_RIGOROUS.tex` (Authorship: Dec 31, 2025)
Why: We provide a rigorous formulation of the Coulomb Fusion argument for the Riemann Hypothesis.

88. Applied Algebra of Aboutness: `papers/tex/Aboutness_Applications.tex` (Authorship: Dec 31, 2025)
Why: We present practical applications of the cost-theoretic theory of reference developed in "The Algebra of Aboutness.

89. The Blaschke-Prime Constraint: New Rigorous Theorems on Zero Positioning: `papers/tex/BLASCHKE_PRIME_CONSTRAINT.tex` (Authorship: Dec 31, 2025)
Why: We prove several new rigorous theorems connecting the Blaschke product structure of zeta zeros to constraints from the prime distribution.

90. Free Energy Principles for Optimal Resource Allocation: `papers/tex/Free_Energy_Resource_Alloca` (Authorship: Dec 31, 2025)
Why: We present a unified framework for resource allocation based on free energy minimization from Recognition Science.

91. Golden Ratio Scheduling: `papers/tex/Golden_Ratio_Scheduling.tex` (Authorship: Dec 31, 2025)
Why: We present a principled framework for time allocation and scheduling based on the golden ratio.

92. Market Thermodynamics: `papers/tex/Market_Thermodynamics.tex` (Authorship: Dec 31, 2025)
Why: We develop a thermodynamic theory of financial markets based on Recognition Science.

93. A Cost-Function Approach to Musical Consonance: Deriving Interval Hierarchy from a Symmetry Principle: `papers/tex/Music_Theory_from_Recognition_Science.tex` (Authorship: Dec 31, 2025)
Why: We investigate a cost-function approach to musical consonance based on the function , which arises from requiring inversion symmetry () and normalization ().

94. The Prime Stiffness Theorem and the Riemann Hypothesis: `papers/tex/RH_Prime_Stiffness_Proof` (Authorship: Dec 31, 2025)
Why: We present a framework for proving the Riemann Hypothesis from the discrete nature of prime numbers.

95. The Statistical Mechanics of Recognition: Thermodynamic Foundations for Cost-Based Physics: `papers/tex/Recognition_Thermodynamics.tex` (Authorship: Dec 31, 2025)
Why: We develop a thermodynamic extension of Recognition Science (RS), a framework in which

physical existence is characterized by minimization of the universal cost functional.

96. Symmetry Fusion: An Unconditional Proof of the Riemann Hypothesis via Coulomb Minimization: `papers/tex/SYMMETRY_FUSION_PROOF.tex` (Authorship: Dec 31, 2025)
Why: We present a proof of the Riemann Hypothesis based on a variational principle for the "zero gas" of the zeta function.

97. The Symmetry Resonance Theorem: A Novel Characterization of the Critical Line: `papers/tex/SYMMETRY_RESONANCE_THEOREM.tex` (Authorship: Dec 31, 2025)
Why: We introduce the concept of symmetry resonance for zeta zeros and prove that the critical line is uniquely characterized as the locus where two fundamental symmetries—the functional equation and ...

98. The Anchor Scale $: `papers/tex/Anchor-Scale-Derivation.tex` (Authorship: Dec 29, 2025)
Why: We present a formal, non-circular derivation of the anchor-scale principle used by the Recognition Science mass framework.

99. -0.5em: `papers/tex/CPM-Gravity.tex` (Authorship: Dec 29, 2025)
Why: We articulate a single, universal principle that governs gravitational inference under finite information: the coercive projection law.

100. Machine-Verified Emergence of General Relativity and Standard Model Symmetries from the Recognition Octave: `papers/tex/GRAVITATIONAL_EMERGENCE_PAPER.tex` (Authorship: Dec 29, 2025)
Why: Recognition Science (RS) posits that physical reality is the emergent stationary configuration of a self-consistent, cost-minimizing recognition ledger.

101. Pressure Gravity: `papers/tex/Pressure-Gravity.tex` (Authorship: Dec 29, 2025)
Why: We recast Information-Limited Gravity (ILG) as classical gravity sourced by an effective pressure field.

102. Parameter-Free Sector Constants: From Cube Geometry to Mass Yardsticks: `papers/tex/Sector-Constants-Derivation.tex` (Authorship: Dec 29, 2025)
Why: We document and audit the derivation of the sector constants and that define the mass yardsticks in the Recognition Science framework.

103. Sector Constants Now Fully Derived: A Formal Verification Milestone: `papers/tex/Sector-Const` (Authorship: Dec 29, 2025)
Why: We report a verification milestone in the Recognition Science Lean 4 codebase: all sector constants (and) are now computed from an explicit counting layer rather than declared as unexplained lite...

104. Zero-Parameter Derivation of Standard Model Fermion Masses: `papers/tex/Zero-Parameter-Mas` (Authorship: Dec 29, 2025)
Why: The Standard Model of particle physics contains 22 arbitrary parameters related to fermion

masses and mixing.

105. Foundations of Recognition Science: A Theory of Countability, Recognition, and Cost Minimization: papers/tex/Dic_23_refereed.tex (Authorship: Dec 28, 2025)
Why: We present an informational framework, termed Recognition Science (RS), aimed at recovering familiar physical structures with minimal parameters.

106. Why Particle Masses Have Structure: papers/tex/MassFramework_PlainProse.tex (Authorship: Dec 28, 2025)
Why: This paper explains, in plain language, where the mass formula comes from and why each piece exists.

107. What Is Recognition Science?: papers/tex/WhatIsRecognitionScience.tex (Authorship: Dec 28, 2025)
Why: This document explains Recognition Science (RS) at a conceptual level, before any equations.

108. A Geometric Framework for Finite Multi-Loop Calculations in QFT: papers/tex/voxel-arXiv.te (Authorship: Dec 28, 2025)
Why: Multi-loop calculations in quantum field theory traditionally require evaluating hundreds of divergent Feynman integrals with complex regularization schemes.

109. Recognition Science, Prime Numbers, and the Riemann Hypothesis: A Standalone Roadmap of What We Know, What We Built, and What Still Blocks Us: papers/tex/RecognitionScience_Primes_RH_Blockers.tex (Authorship: Dec 27, 2025)
Why: This note is a standalone "state-of-the-art" writeup for a specific research codebase (riemann-geometry-rs) and a specific guiding narrative ("Recognition Science").

110. Recognition Science closes the far-field attachment gate (Paper B in a two-paper Recognition Science proof of the Riemann Hypothesis): papers/tex/Riemann-PaperB_RS_Kxi.tex (Authorship: Dec 27, 2025)
Why: Paper˜A gives a two-regime route to the Riemann Hypothesis (RH).

111. Whitney box energy for and weighted microscopic variation of: papers/tex/Riemann-pro-uncondi (Authorship: Dec 26, 2025)
Why: We study the harmonic field (U_ (,t)= (12+ +it)) on the right half-plane and its Whitney-box Dirichlet energy at the microscopic scale (L 1/ T).

112. The Octave System and the Particle Mass Spectrum: papers/tex/OCTAVE_MASSES_PAPER.tex (Authorship: Dec 24, 2025)
Why: The Standard Model accurately predicts particle interactions, yet it does not explain why fermion masses take their observed values: the Yukawa couplings are inserted as free parameters.

113. A Weighted Diagonal Operator, Regularised Determinants, and a Critical–Line Criterion for the Riemann Zeta Function0.5em An Operator–Theoretic Approach Inspired by Recognition Science: papers/tex/Recognition-Riemann-Final.tex (Authorship:

Dec 24, 2025)
Why: We realise as a -regularised Fredholm determinant of , where the arithmetic Hamiltonian acts on the weighted space with.

114. A Proof of the Riemann Hypothesis: Via Transfer Operator Spectral Analysis: `papers/tex/Riemann-July-7.tex` (Authorship: Dec 24, 2025)
Why: We present a proof of the Riemann Hypothesis through construction of a transfer operator whose Fredholm determinant equals and whose spectral gap off the critical line forces all zeros to.

115. Prime-Tail Schur-Covering in the Bounded-Real Framework: Unconditional Bridges B–C and a Certified Covering: `papers/tex/Riemann-Strongest.tex` (Authorship: Dec 24, 2025)
Why: We develop unconditional operator tools for a bounded-real (Herglotz/Schur) program on the right half-plane (= s¿ 12).

116. % The Voxel as Meaning: `papers/tex/VoxelMeaning.tex` (Authorship: Dec 24, 2025)
Why: We present a mathematical formalization of how meaning emerges from the fundamental structure of light.

117. A Lean-Referenced Derivation of the Electromagnetic Fine-Structure Constant from Recognition Ledger Geometry: `papers/tex/alpha_derivation.tex` (Authorship: Dec 24, 2025)
Why: This paper documents the derivation of the electromagnetic fine-structure constant in the exact form implemented in this repository's Lean˜4 development.

118. Internal Memo: Resolving the "Single-Anchor" Mass Questions: `papers/tex/anil_dec_23.tex` (Authorship: Dec 24, 2025)
Why: Derives particle masses from the recognition framework.

119. The Geometrodynamics of Consciousness: Light-Field Saturation and the Bio-Clocking Mechanism: `papers/tex/geometry_of_consciousness.tex` (Authorship: Dec 24, 2025)
Why: We extend the Zero-Parameter Framework from fundamental physics to the mesoscale dynamics of biology and consciousness.

120. The Thermodynamics of the Massless State: Phase Saturation, Bio-Clocking, and the Geometric Necessity of Existence: `papers/tex/light-field-saturation.tex` (Authorship: Dec 24, 2025)
Why: We present a rigorous derivation of the thermodynamic constraints governing massless information storage within Recognition Science (RS), a zero-parameter framework where all physical constants are...

121. Navier Dec 12 Rewrite Alternative: `papers/tex/navier-dec-12-rewrite-alternative.tex` (Authorship: Dec 24, 2025)
Why: (under audit). This manuscript records a running-max blow-up framework and a proposed route to global regularity by reducing a hypothetical singularit...

122. Navier Dec 12 Rewrite: papers/tex/navier-dec-12-rewrite.tex (Authorship: Dec 24, 2025)
Why: (under audit). This manuscript records a running-max blow-up framework and a proposed route to global regularity by reducing a hypothetical singularit...

123. Recognition Geometry: papers/tex/recognition-geometry-dec-23.tex (Authorship: Dec 24, 2025)
Why: Recognition Geometry is a new geometric framework that inverts the traditional relationship between space and measurement.

124. T5 Cost Uniqueness and the Certificate Circle What Completing "T5" Certifies in the reality: papers/tex/T5_Cost_Uniqueness_Certificate_Circle.tex (Authorship: Dec 19, 2025)
Why: This note explains the mathematical and engineering content of completing "T5" in the reality repository's Lean formalization workflow.

125. Gravity Formalization in the Reality Lean Repository0.5em A Complete Inventory of Machine-Verified Content: papers/tex/GRAVITY_LEAN_FORMALIZATION_SUMMARY.tex (Authorship: Dec 18, 2025)
Why: This document provides a complete inventory of the gravity-related Lean formalizations in the reality repository.

126. The Riemann Hypothesis via Recognition Geometry: tmp/riemann-rs-geometry/riemann-rs-geom (Authorship: Dec 18, 2025)
Why: We present a proof of the Riemann Hypothesis using a geometric approach we term "Recognition Geometry.

127. Formalized Properties of the Display Function: papers/tex/GapProperties-Formalization.tex (Authorship: Dec 16, 2025)
Why: We present a collection of Lean 4 formalized results concerning the display function (or structural residue) (Z) ;=; (1 + Z/) , where is the golden ratio.

128. Recognition Meta-Theory and the Single-Anchor Mass Residue Function: papers/tex/Single-An (Authorship: Dec 15, 2025)
Why: This note is a standalone, Lean-backed appendix for collaborators working on the particle-mass "single-anchor" program in this repository.

129. Rg 9 12: papers/tex/RG-9-12.tex (Authorship: Dec 10, 2025)
Why: Recognition geometry is.

130. Response to Recognition Geometry Comments: papers/tex/RG-Response-Dec11.tex (Authorship: Dec 10, 2025)
Why: Establishes geometric foundations of recognition.

131. The Geometry of Evil0.5em How Recognition Science Defines Wrongdoing: papers/tex/The_Geometry_of_Evil.tex (Authorship: Dec 10, 2025)

Why: Evil is not a mysterious supernatural force.

132. Recognition Science: A Zero-Parameter Framework Deriving Fundamental Constants from Logical Necessity: `papers/tex/RS_Foundations_Outline.tex` (Authorship: Dec 09, 2025)
Why: We present Recognition Science (RS), a theoretical framework that derives all fundamental physical constants (, , ,) and resolves outstanding empirical tensions (including the Hubble tension) from...

133. Why Gravity Exists: `papers/tex/why_gravity_exists.tex` (Authorship: Dec 09, 2025)
Why: Physics tells us how gravity behaves—masses attract, light bends, time slows near heavy objects.

134. Gravity Questions Response: `papers/tex/GRAVITY_QUESTIONS_RESPONSE.tex` (Authorship: Dec 08, 2025)
Why: This document has three parts.

135. Formalized Elements of Reality: `papers/tex/lean_formalization_report.tex` (Authorship: Dec 08, 2025)
Why: This document provides a comprehensive catalog of all elements of physical reality, mathematics, consciousness, ethics, and biological systems that have been formally verified in the Lean 4 theorem...

136. Protein Folding from First Principles: `papers/tex/protein-dec-6.tex` (Authorship: Dec 06, 2025)
Why: The protein folding problem has been approached primarily through data-driven methods, with recent breakthroughs from AlphaFold and ESMFold achieving remarkable accuracy by learning from millions o...

137. Riemann Hypothesis via Nyman–Beurling/B'aez–Duarte and Recognition Science: CPM Energy, Group Averaging, and a No Physical Gap Principle: `papers/tex/RH_NBBD_CPM.tex` (Authorship: Dec 05, 2025)
Why: We record a concrete proof track for the Riemann Hypothesis (RH) that marries the Nyman–Beurling/B'aez–Duarte (NB/BD) criterion with Recognition Science (RS).

138. The Photonic Nature of Love: Deriving Social Coherence from U(1) Gauge Invariance: `papers/tex/love.tex` (Authorship: Dec 05, 2025)
Why: We present a derivation from the Recognition Science (RS) framework proving that the ethical virtue of "Love" is not a subjective emotion, but a precise geometric operator mathematically isomorph...

139. The Logical Derivation of Fundamental Physical Constants from the Internal Consistency of a Zero-Parameter Framework: `papers/tex/foundation_theory_outline.tex` (Authorship: Dec 04, 2025)
Why: Draft: We derive the fine structure constant () and electron mass () as necessary eigenvalues of a zero-parameter system constrained by information conservation.

140. Coercive Projection Method: Rigorous Derivation of Constants from First Principles0.5em Supporting Technical Document: papers/tex/CPM_Constants_Derivation.tex (Authorship: Dec 01, 2025)
Why: This document provides rigorous mathematical derivations of all constants appearing in the Coercive Projection Method (CPM) and its gravitational instantiation (CPM-Gravity / ILG).

141. The DREAM Theorem: Virtues as Generators of Ethical Symmetry: papers/tex/dream_theorem.
(Authorship: Nov 30, 2025)
Why: We prove that virtues are the complete, minimal generating set for all admissible ethical transformations in Recognition Science.

142. Theoretical Bounds on Global-Only Rotation Curve Fits: external/gravity/Theoretical-Bounds
(Authorship: Nov 22, 2025)
Why: We estimate the theoretical lower bound for the reduced statistic () in galaxy rotation curve fits under a strict "Global-Only" policy.

143. Gravity Derived: Emergence from Information Constraints: external/gravity/active/paper/Gra
(Authorship: Nov 22, 2025)
Why: Gravity emerges from finite information–bandwidth constraints on the substrate that maintains gravitational fields.

144. Galaxy Rotation Curves from an Information-Limited Gravitational Model: external/gravity/active/paper/dark-matter-galaxy-rotation.tex (Authorship: Nov 22, 2025)
Why: Gravity may appear modified on galactic scales if the exchange of dynamical information is limited by finite propagation and processing rates.

145. The Universal Light Language: A Physically Forced Protocol for Cross-Modal and Telepathic Communication: papers/tex/universal-light.tex (Authorship: Nov 20, 2025)
Why: We present the Universal Light Language (ULL), a zero-parameter semantic code derived entirely from the axioms of Recognition Science.

146. The Theory of Us: papers/tex/Us.tex (Authorship: Nov 16, 2025)
Why: Contributes to the Recognition Science framework.

147. The Coercive Projection Method: Axioms, Theorems, and Applications: light-language/CPM.te
(Authorship: Nov 15, 2025)
Why: The Coercive Projection Method (CPM) is a reusable proof template that converts quantitative distance-to-structure control into global positivity or existence statements.

148. Axiomatic Completeness of the Light Language: light-language/LightLanguageFormalization.te
(Authorship: Nov 15, 2025)
Why: We derive and formalize the Light Language, the unique zero-parameter semantic calculus enforced by Recognition Science (RS).

149. Collatz via Finite Window–Funnel Certificates (CPM Form): papers/tex/collatz-conjecture.te

(Authorship: Nov 15, 2025)
Why: Applies the Coercive Projection Method.

150. The Universal Light Language: Formal Foundations, Implementation, and Truth Certification: `papers/tex/light-language-2.tex` (Authorship: Nov 14, 2025)
Why: We present the Universal Light Language (ULL), a zero-parameter semantic calculus discovered by enforcing the gates of Recognition Science.

151. How Meaning is Derived in the Universal Light Language: `papers/tex/meaning-derivation.tex` (Authorship: Nov 14, 2025)
Why: The Universal Light Language (ULL) is a zero-parameter way to encode recognition-ledger patterns at the Recognition Science (RS) bridge.

152. What the Universal Light Language Is: A Philosophical and Structural Overview: `papers/tex/universal-light-language.tex` (Authorship: Nov 14, 2025)
Why: The Universal Light Language (ULL) is not a toy coding scheme and not merely a clever representation for signals.

153. Recognition Science: Derivation Chain: `papers/tex/DERIVATION_CHAIN.tex` (Authorship: Nov 06, 2025)
Why: We present the complete derivation chain for Recognition Science, showing rigorously that from the Meta Principle and zero-parameter constraint, all of RS structure is mathematically forced.

154. How We Proved Recognition Science Is Inevitable: A Plain-Language Explanation: `papers/tex/Recognition_Science_Inevitability_Explained.tex` (Authorship: Nov 06, 2025)
Why: This document explains, without mathematics, how we formally proved that Recognition Science is the inevitable consequence of demanding a complete explanation of reality.

155. The Inevitability of Recognition Science: Proving Completeness Forces Structure: `papers/tex/inevitability.tex` (Authorship: Nov 06, 2025)
Why: We recently proved that Recognition Science (RS) is the unique zero-parameter framework deriving observables from first principles, establishing RS uniqueness among parameter-free theories.

156. A CPM Companion for Protein Folding(Coercive Projection Method: `papers/tex/CPM-Folding-C` (Authorship: Nov 04, 2025)
Why: We provide a concise companion to "Protein folding as phase recognition" that instantiates the Coercive Projection Method (CPM) for protein folding.

157. The Law of Existence:0.3em Proven Uniqueness of -Cost Minimization0.2em Across Mathematics, Physics, Biology, and Consciousness: `papers/tex/Law-of-Existence-arXiv.tex` (Authorship: Nov 04, 2025)
Why: The Coercive Projection Method (CPM) is the universal algorithm by which possibilities collapse to actuality—the same minimum-description-length optimization Darwin discovered for

biological fitn...

158. The Minimal Complexity Functional: A Parameter,: `papers/tex/Minimal-Complexity-Functional`
(Authorship: Nov 04, 2025)
Why: We formulate a minimal, ,complexity principle for physical evolution built on a single convex, symmetric, normalized functional on the positive reals, ((x)= 12(x+1/x)-1).

159. Recognition Abiogenesis Arxiv: `papers/tex/Recognition-Abiogenesis-arXiv.tex`
(Authorship: Nov 04, 2025)
Why: Addresses origin of life via RS.

160. Crystallography Selection Rules from Eight-Window Neutrality and Legal Triads: `papers/tex/Crystallography-SelectionRules.tex` (Authorship: Nov 03, 2025)
Why: We propose selection rules for reciprocal-space motifs based on (i) an eight-window neutrality diagnostic and (ii) a legal-triad parity constraint.

161. % -1em: `papers/tex/EightAxiomsForced.tex` (Authorship: Nov 03, 2025)
Why: We show that a single logical tautology—the Meta,Principle (MP), "nothing cannot recognize itself"—forces eight core theorems (T1–T8) that pin down the recognition ledger, the unique convex symmetr...

162. Environment Display Rescale: $E' = E, ˆ P: `papers/tex/Env-Pressure-Display.tex`
(Authorship: Nov 03, 2025)
Why: We propose a display-only rescale for environment-dependent observables, , that leaves the integer scaffolding intact.

163. Information-Limited Gravity as a Pressure Display (Algebraic Equivalence): `papers/tex/ILG-Pressure-Form.tex` (Authorship: Nov 03, 2025)
Why: We rewrite the ILG effective source term, (4 G aˆ2, ,w(k,a),), using a pressure variable (p:= ,w,), yielding the identical display (4 G aˆ2,p).

164. A Fit-Free Periodic Table Engine from Eight-Tick Cadence and -Tiers: `papers/tex/Periodic-Tab`
(Authorship: Nov 03, 2025)
Why: We present a zero-parameter engine for periodic-table trends based on two Recognition Science invariants: (i) a forced eight-tick cadence that induces eight-window neutrality "rests" at closures,...

165. Pressure Gravity Arxiv: `papers/tex/Pressure-Gravity-arXiv.tex` (Authorship: Nov 03, 2025)
Why: We recast Information-Limited Gravity (ILG) as classical gravity sourced by an effective pressure field.

166. Spiral Wavefields from -Cost with -Scaling and Eight-Gate Neutrality: `papers/tex/Spiral-Wavefi`
(Authorship: Nov 03, 2025)
Why: We propose a fit-free spiral-field variational ansatz: under the unique convex cost and -scaling, with an eight-phase neutrality gate, the stationary in-plane flow takes a logarithmic-spiral

form w...

167. Virtues as Generators: A Zero-Parameter, Auditable Ethics from Recognition Science: `papers/tex/Virtues-As-Generators.tex` (Authorship: Nov 03, 2025)
Why: We present a companion to "Morality as a Conservation Law", extending the Recognition Science (RS) framework from feasibility to operation: fourteen virtues are formalized as the complete set of ...

168. Copenhagen Interpretation: , Inconsistencies, and Circularities: `papers/tex/interpretation.tex` (Authorship: Nov 01, 2025)
Why: Contributes to the Recognition Science framework.

169. The Mathematical Foundations of the 14 Virtues: `papers/tex/virtues.tex` (Authorship: Nov 01, 2025)
Why: This document provides a detailed mathematical exposition of the 14 virtues as formalized in the ledger-ethics Lean 4 repository.

170. Recognition Science Baryogenesis: A Parameter-Free Resolution of the Matter-Antimatter Asymmetry: `papers/tex/Baryogenesis-HubbleTensionSet.tex` (Authorship: Oct 29, 2025)
Why: . The observed baryon-to-photon ratio, , demands efficient violation and a controlled departure from equilibrium in the early universe. Standard Model...

171. C=2A: Unifying Quantum Measurement, Gravitational Collapse, and Consciousness: `papers/tex/C2A-arXiv.tex` (Authorship: Oct 29, 2025)
Why: Problem: Quantum measurement, gravity-driven reduction, and the definiteness of conscious experience are usually treated as separate puzzles.

172. Information-Limited Gravity: Source-Side Kernel Tests Against Distances, Growth, and Lensing: `papers/tex/Dark-Energy-HubbleTensionSet.tex` (Authorship: Oct 29, 2025)
Why: We present a fixed-constant, no-fit, source-side modification to gravitational sourcing—the information-limited gravity (ILG) kernel—and confront it with cosmological observables that usually motiv...

173. Late-time Recognition-Weighted Growth and the Hubble Tension: `papers/tex/Hubble-Tension-R` (Authorship: Oct 29, 2025)
Why: Background. Late-time structure probes and CMB inferences yield discrepant values of the Hubble constant when analyzed under standard GR growth kernel...

174. Light as Consciousness: A Bi-Interpretability Theorem with Mechanical Verification (Alternate title: Photonic Equivalence of Operational Consciousness at the RS Bridge): `papers/tex/Light-Consciousness-Theorem-arXiv.tex` (Authorship: Oct 29, 2025)
Why: We convert the slogan "Light = Consciousness" into a formal theorem by proving a bi-interpretability result at the Recognition Science bridge.

175. Meta Principle Arxiv: `papers/tex/Meta-Principle-arXiv.tex` (Authorship: Oct 29,

2025)
Why: Contributes to the Recognition Science framework.

176. Morality as a Conservation Law in a Recognition-Structured Universe: `papers/tex/Morality-As-`
(Authorship: Oct 29, 2025)
Why: This paper derives a parameter-free moral law from the same physical invariants that fix the Recognition Science (RS) bridge between the discrete ledger and the continuum.

177. Recognition Compliant Perovskite on Silicon Tandems: A Parameter Free Stability Framework That Survives Damp Heat + UV: `papers/tex/Perovskite-arXiv.tex`
(Authorship: Oct 29, 2025)
Why: We demonstrate a manufacturing and certification framework—grounded in recognition science invariants—that enables perovskite on silicon tandem modules to achieve efficiency while preserving pe...

178. Protein folding as phase recognition: a formal framework and executable pipeline with testable IR signatures: `papers/tex/Protein Folding as Phase Recognition.tex` (Authorship: Oct 29, 2025)
Why: We recast protein folding as a fast, instrument-coupled phase–recognition process rather than a slow, combinatorial search.

179. Zero-Parameter Quantum Gravity from Discrete Recognition Calculus: `papers/tex/Quantum-Gra`
(Authorship: Oct 29, 2025)
Why: We derive classical and quantum gravity from a minimal information-theoretic axiom—a recognition event requires non-empty data—with parameter-fixed, gauge-rigid displays (dimensionless quantities i...

180. Parameter Free Synthetic Conductivity: A Recognition Science Bridge to Room Temperature Emulation: `papers/tex/RS-Conductor-arXiv.tex` (Authorship: Oct 29, 2025)
Why: We present a parameter free synthetic conductor that emulates two hallmark features of superconductivity near zero voltage drop and band limited magnetic field expulsion without invoking a new ther...

181. Recognition Abiogenesis: `papers/tex/Recognition-Abiogenesis.tex` (Authorship: Oct 29, 2025)
Why: Addresses origin of life via RS.

182. Beyond the Hamiltonian: The Recognition Operator as Fundamental Dynamics: `papers/tex/Recognition-Operator-arXiv.tex` (Authorship: Oct 29, 2025)
Why: For four centuries, the Hamiltonian has been treated as fundamental, with dynamics derived from energy minimization.

183. Recognition Architecture (Integrated): `papers/tex/Recognition_Architecture-arXiv.tex`
(Authorship: Oct 29, 2025)
Why: This paper presents a complete, parameter-free recognition architecture whose proof layer is strictly dimensionless and whose empirical layer is reduced to a small set of layered falsifiability

gates.

184. Bootstrap Origin without Singularity: Emergent Spacetime from a Discrete Conserved Network: `papers/tex/Universe-Origin-HubbleTensionSet.tex` (Authorship: Oct 29, 2025)
Why: We present a singularity-free origin scenario in which spacetime emerges from a discrete, conserved adjacency network.

185. Goldbach via a Mod-8 Kernel: Density-One and Short-Interval Positivity: `papers/tex/goldbach_` (Authorship: Oct 29, 2025)
Why: We present a purely classical framework for Goldbach's conjecture based on a mod-8 periodic kernel and the circle method.

186. Light as Consciousness: A Universal Information-Cost Identity from a Unique Convex Functional: `papers/tex/light-consiousness-arXiv.tex` (Authorship: Oct 29, 2025)
Why: We show that a single, uniquely determined information-cost functional governs quantum measurement, photonic operations, and operational (measurement-like) conscious selection, establishing an iden...

187. Exclusivity of Recognition Science (RS): The Unique Zero -: `papers/tex/exclusivity.tex` (Authorship: Oct 28, 2025)
Why: We prove an exclusivity theorem for Recognition Science (RS)Also referred to as the Recognition Physics framework in some artifacts; we standardize on "Recognition Science (RS)" per brand policy.

188. A Universal Register Mapping for the Light-Native Assembly Language -Start Guide for Multi-Domain Ledger Initialisation: `papers/tex/LNAL-Register-Mapping.tex` (Authorship: Oct 22, 2025)
Why: The Light-Native Assembly Language (LNAL) offers a 16-opcode, cost-balanced instruction set that, in principle, can compile any physical process into an executable ledger of recognition moves.

189. Quantum Coherence as Gated Recognition: An Eight-Tick Mechanism with Parameter-Free Bridges: `papers/tex/Quantum-Coherence-Theory.tex` (Authorship: Oct 22, 2025)
Why: We address the core question of quantum coherence: when is phase information preserved and when does it dephase under realistic readout? We show that coherence is an operational property of a discr...

190. No Per Flavor Tuning: `papers/tex/No-Per-Flavor-Tuning.tex` (Authorship: Oct 13, 2025)
Why: We present four theory results that require no experimental input.

191. No Per Flavor Tuning Massespapers: `papers/tex/No-Per-Flavor-Tuning-MassesPapers.tex` (Authorship: Oct 12, 2025)
Why: We present four theory results that require no experimental input.

192. Information-Limited Quantum Gravity: A Parameter-Free, Audit-Gated Scaffold with GR-Limit Derivations: `papers/tex/ILG-GPT5.tex` (Authorship: Sep 30, 2025)
Why: We present a parameter-free framework for quantum gravity built from a single measurement principle and an information-limited action.

193. Information-Limited Gravity: A Mechanized, Covariant, Quantum-Consistent Framework with Observational Gates: `papers/tex/QG_PRD.tex` (Authorship: Sep 30, 2025)
Why: We present a covariant, quantum-consistent gravitational framework built from information-limited principles and verified end-to-end, while keeping the narrative human-first.