

Daniel Toupin

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AI MODEL EVALUATION / PHYSICS & PHILOSOPHY SUBJECT-MATTER EXPERT

Independent mathematical-physics researcher and technical evaluator specializing in physics, mathematics, philosophy, and AI model evaluation. Experienced in constructing rigorous multi-step problems, identifying logical and mathematical errors, writing publication-quality LaTeX solutions, and evaluating technical arguments for correctness, clarity, and completeness. Peer reviewer for Synthese (Springer Nature).

TARGET ROLES

AI Model Evaluator | Physics SME | Technical Content Reviewer | Prompt Writer | Data Labeling Specialist | Philosophy SME

CORE FIT FOR AI EVALUATION

- Design and solve multi-step physics, mathematics, and philosophy problems from undergraduate through research level.
- Evaluate model outputs for correctness, hallucinations, missing assumptions, circular reasoning, and incomplete proofs.
- Write precise solution rubrics, explanations, and reviewer feedback in LaTeX and clear technical prose.
- Check arguments involving quantum foundations, modal logic, analytic number theory, geometry, and philosophy of science.
- Translate high-complexity research material into concise assessments for non-specialist and specialist audiences.

SUBJECT-MATTER EXPERTISE

Physics:	Quantum mechanics; QFT; general relativity; gauge theory (SU(N)); CFT; celestial holography; cosmology; dark matter; Standard Model; scattering amplitudes.
Mathematics:	Spectral theory; measure theory (Haar, adelic, Tamagawa); analytic number theory; zeta and L-functions; complex analysis; differential geometry; Lie algebras; representation theory.
Tools & Writing:	LaTeX; Python; technical editing; proof-checking; rubric design; academic peer review; AI model evaluation; scientific communication.

EXPERIENCE

Independent Researcher / Principal Investigator | Golden Physics Project | Cardinal, ON | 2024-Present

- Developed a 920-page mathematical-physics monograph spanning quantum field theory, gravity, analytic number theory, and cosmology.
- Produced standalone papers on the Riemann Hypothesis, Yang-Mills mass gap, BSD Conjecture, dark matter, quantum gravity, and philosophy of science.
- Developed original technical arguments connecting Grassmannian $Gr(2,4)$ geometry, celestial holography, Standard Model structure, and cosmological phenomenology.
- Built and communicated complex mathematical arguments for expert and non-specialist readers.

Reviewer | Synthese (Springer Nature) | Remote | Mar 2026

- Invited by the Editor-in-Chief to review a manuscript on the Free Will Theorem and compatibilism.
- Assessed modal logic, quantum foundations, philosophical claims, argumentative structure, and technical clarity.

SELECTED PUBLICATIONS & PREPRINTS

- On the Nature of Nature: Unified Framework Connecting Number Theory, QFT, and Cosmology. 920 pp.
- Standalone papers on mathematical physics, number theory, quantum gravity, dark matter, and philosophy. PhilPapers/Zenodo.
- Philosophy papers: The Fixed-Point Paradox; Q's Gambit; On the Freedom of the Will.

EDUCATION

Independent Advanced Study | Mathematical Physics, Analytic Number Theory, and Philosophy of Science | 1999-Present