

Goal of U-TIM: A System for Accelerating Scientific Discovery

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Abstract

The Universal Theory Incoherence Measure (U-TIM) framework is designed to be implemented by an AI system capable of processing ideas from non-academic sources by checking them for logical incoherence and ensuring consistency with existing knowledge. The system first uses U-TIM to filter out incoherent ideas, then applies domain-specific coherence check models to assess validity and scientific rigor. The user interface allows individuals to choose the domain of their idea, ensuring that the appropriate models and variables are automatically applied. This approach accelerates the scientific process, ensures proper recognition of contributors, and democratizes science by giving non-academic individuals an equal opportunity to have their ideas validated.

1 Introduction

The process of scientific discovery has historically been limited by institutional boundaries, often sidelining innovative ideas from those outside academia. The Universal Theory Incoherence Measure (U-TIM) addresses this gap by offering an AI-driven platform that can automatically evaluate scientific ideas for logical coherence and thematic consistency. This paper outlines how U-TIM, alongside other coherence-check models, enables faster scientific progress, democratizes science, and ensures proper attribution of ideas to their originators.

2 Goal of U-TIM

The goal of U-TIM is to create an AI system that can:

- Allow the user to select the domain: The user interface allows users to choose the area in which they want to check their idea (e.g., Physics, Biology, Economics, etc.). This ensures that the correct domain-specific variables are used in the U-TIM evaluation process.
- Filter ideas for incoherence: U-TIM first applies a coherence-check filter to measure the incoherence of a submitted idea, rejecting ideas that are logically inconsistent or incomplete.
- Apply domain-specific coherence models: Once the incoherence check is passed, the system applies coherence check models specific to the selected domain to further validate the idea.
- Automate recognition and attribution: The AI automatically timestamps and credits valid ideas, ensuring that contributors, whether from academia or not, are appropriately recognized.
- Accelerate scientific progress: By rapidly evaluating and organizing ideas, this AI model helps the scientific community progress faster, bypassing traditional peer review bottlenecks and facilitating broader collaboration.

3 U-TIM's Role in Democratizing Science

U-TIM facilitates wider participation in science by:

- Allowing non-academic individuals to contribute valid ideas, which are then properly recognized and credited.

- Enabling faster idea evaluation, which reduces the time it takes for ideas to go from concept to validated scientific knowledge.
- Removing traditional barriers to entry, enabling more diverse and innovative contributions.

4 The AI Interface for Scientific Idea Validation

The AI system interfaces with users in a user-friendly manner:

- Domain Selection: Users select the scientific domain they wish their idea to be evaluated in.
- Incoherence Check: U-TIM applies the incoherence filter.
- Coherence Models: The system applies domain-specific coherence check models that evaluate the idea's validity within the given domain.
- Result Presentation: Users receive feedback on their idea's validity, along with any suggestions for refinement or further testing.
- Recognition and Timestamping: Valid ideas are credited to the user and timestamped.

5 Impact of U-TIM on Scientific Discovery

By implementing U-TIM, the following outcomes are expected:

- Faster, more efficient scientific discovery as ideas are automatically processed and validated by the AI system.
- Increased inclusivity in scientific contributions, with proper recognition given to contributors regardless of their background or academic status.
- A dynamic, interactive scientific ecosystem, where ideas can be continuously refined and built upon, leading to more collaborative innovation.

6 Conclusion

U-TIM is poised to transform the scientific process, speeding up discovery and fostering inclusive participation from all people. By automating idea evaluation, validation, and recognition, U-TIM makes scientific progress more accessible and faster than ever before. This approach could fundamentally change the way we conduct and recognize scientific work.

7 Future Work

The next steps for U-TIM involve:

- Expanding the coherence check models for additional domains.
- Integrating real-time feedback and collaboration tools for users within the public repository.
- Continuing to improve the AI's learning capabilities to better evaluate and integrate new scientific theories.

References

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- **João Lucas Meira Costa** — Concepts & Ideas
- **ChatGPT, DeepSeek, Gemini & GitHub Copilot** — Equations, Code & Documentation

How to Cite U-TIM

The preferred citation format for U-TIM is:

João Lucas Meira Costa. (2025). U-TIM: Universal Theory Incoherence Measure. GitHub repository: <https://github.com/SephirotAGI/U-TIM>

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