



# Problem Statement:

## AI-Powered Literature Survey Assistant

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### Context

Scientists across disciplines face an overwhelming volume of published research. Traditional keyword-based search engines often return thousands of results, leaving researchers to manually filter, read, and synthesize findings. This slows down innovation, increases redundancy, and risks overlooking critical insights.

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### Challenge

- **Information Overload:** Millions of papers published annually across journals and repositories.
- **Fragmented Knowledge:** Relevant insights scattered across disciplines and formats.
- **Time Constraints:** Manual surveys consume weeks or months, delaying experiments and grant proposals.
- **Bias & Gaps:** Researchers may unintentionally miss contradictory evidence or underexplored areas.

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### Objective

Develop an AI model that accelerates and enhances literature surveys by:

- Performing semantic search to retrieve contextually relevant papers.
- Generating structured summaries of key findings, methods, and limitations.
- Mapping citation networks to highlight influential works and overlooked studies.
- Conducting trend and gap analysis to identify emerging themes and research opportunities.
- Providing transparent reasoning for recommendations to build trust among scientists.

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### Expected Impact

- Reduce literature review time from months to days.
- Increase research quality by surfacing diverse perspectives and contradictions.
- Empower interdisciplinary exploration by connecting insights across fields.
- Support grant writing, peer review, and experimental design with evidence-based synthesis.