AI-assisted Systematic Literature Review and Bibliometric Analysis

Not merely for speed, but for improved quality.

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WHAT WE'RE DOING

Two hours, two halves

~1 hr

Systematic literature review

From a search strategy through screening to a PRISMA-ready write-up.

~1 hr

Bibliometric analysis

From raw data to network maps you can actually interpret.

READ THIS FIRST

AI assists the process. It does not replace it.

Lean on AI to move faster. Keep the rigour, the documentation and your own judgement exactly where they belong.

FOR THE REVIEW

Search tools drift

AI search can return different results on different runs. Great for discovery, but not the auditable record. Your documented database search stays the backbone.

FOR BIBLIOMETRICS

The maths still stays

The heavy lifting is computational. Language models help label and interpret, always with a human checking the work.

01

Systematic Literature Review

BEFORE THAT

SLR is NOT a Collection of Summaries

It is a structured and critical synthesis of existing studies based on a clear research question, search strategy, inclusion and exclusion criteria, and analytical framework. The aim is not merely to describe what each study says, but to identify patterns, gaps, trends and relationships across the literature.

A good SLR shows how the body of knowledge has developed and what future research should address.

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ORIGINAL BESEARCH

AI governance: a systematic literature review

Amrita Banerjee[1] · Rafael Jimenez[2] · Maureen Brand[3]

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Abstract
As artificial intelligence (AI) becomes an ever-bigger part of our societies, it also introduces distinct types of risks including biased decision-making, decreased transparency, and misuse. This introduces the necessity to systematically review peer-reviewed academic articles concerning AI governance. In this review, we implement the PRISMA 2020 guidelines to ensure transparency, rigor, and reproducibility in our search methodology. One the Web of Science, 871 studies were initially obtained. After a rigorous preprocess of duplicate removal, title and abstract screening, and full-text review, 92 high-quality studies published between 2010 and 2024 were ultimately included in this systematic literature review. Our findings reveal 4 themes: ethical frameworks, regulatory approoches, technological solutions, and organizational strategies, and 6 key aspects: transparency, accountability, fairness, privacy, robustness, and human oversight. We also noted significant research gaps and future directions.

Keywords Artificial intelligence · AI governance · Responsible AI · AI ethics · AI

1 Introduction

Artificial intelligence (AI) has emerged as one of the most transformative technologies of our time (Russell & Norvig, 2020). Its rapid adoption across industries and public sectors has undoubtedly brought numerous benefits, including increased efficiency, cost reduction, and enhanced decision-making capabilities (Davenport & Ronald, 2019; Jobin et al., 2019). However, this widespread integration also raises profound ethical, legal, and societal concerns (O'Neil, 2016; Vallor, 2016).

decision-making, the implication on dialogues ascociated with ethical concerns.

AI and Ethics (2025) 5:289-297 sets out a comprehensive systematic literature review on AI governance, analysing peer-reviewed academic articles to make sense of the emerging themes, research trends, and regulatory frameworks. Using the PRISMA 2020 guidelines in our search strategy has ensured that the process we followed is both rigorous and traasparent (Page et al., 2021). From an initial pool of 871 articles obtained from Web of Science, we arrived at the final set of 92 high-quality studies following a meticelous process of screening and evaluation.

The findings of this review are structured around four main themes: ethical frameworks, regulatory approaches,

HOUR 1 · OVERVIEW

The pipeline, mapped to PRISMA

1. Question & search strategy
2. Discovery & supplementary search
3. Screening — THE CORE
4. Data extraction
5. Synthesis & write-up
6. Reporting

Question and search strategy

Any free AI chat tool

ChatGPT · Claude · Gemini

Draft and tighten your Boolean string, and frame the question with PICO or SPIDER. Quick, conversational, and good at catching synonyms you'd miss.

The catch

A generated string is only a starting point.
It hasn't searched anything yet.

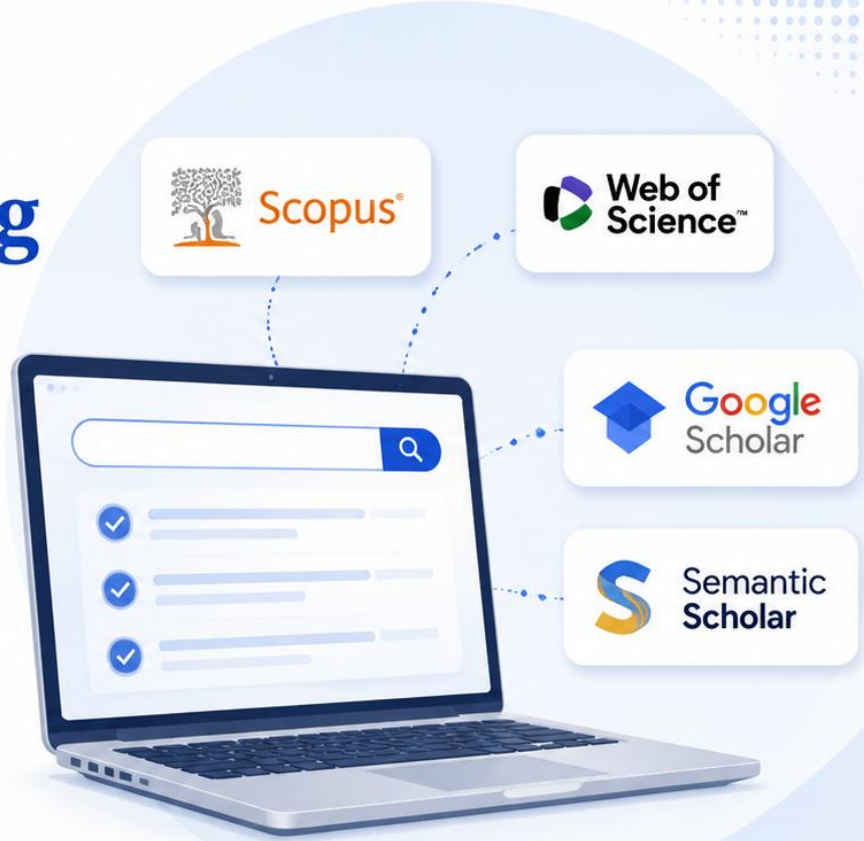
Run it in the real databases, see what it returns, then refine.
That run is your record.

SYSTEMATIC LITERATURE REVIEW

Discovery and supplementary searching

In systematic literature reviews, publishers commonly expect researchers to search established academic databases such as **Scopus** and **Web of Science**. However, access to these databases is often restricted by institutional subscription.

If the target journal allows the use of alternative databases, researchers may conduct the review using other scholarly search platforms, such as **Google Scholar** and **Semantic Scholar**. Nevertheless, the selection of databases must be clearly justified, and the search strategy should be reported transparently.



Screening: AI Assists to Check Relevance

rayyan

WEB-BASED, FRIENDLY

- Free tier covers **3** active reviews
- Learns from **your** include / exclude calls
- Rates every record with a relevance score

Best for a workshop, or a small team.

ASReview

OPEN-SOURCE, FREE

- Active learning that prioritises records
- Cuts screening effort by roughly **70** to **90%**
- Fully transparent and reproducible

Best for large reviews, if you'll install it.

SYSTEMATIC LITERATURE REVIEW

Reporting and the PRIMAS Flow

PRISMA 2020 generator

The free Shiny app

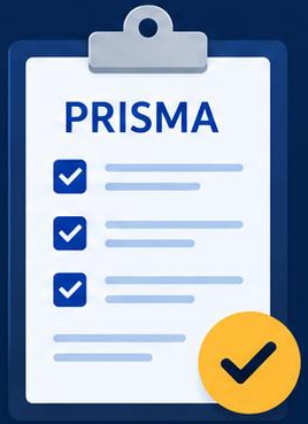
https://estech.shinyapps.io/prisma_flowdiagram/

Feed in your numbers at each stage and it produces the flow diagram reviewers expect, ready to drop into the manuscript.

Don't forget stage zero

AI sped up the search and the screening.

But the record you report **has to be reproducible.** That part is still on you.



02

Bibliometric Analysis

BIBLIOMETRIC ANALYSIS

A different question entirely

A systematic review asks

"What does the evidence say?"

It weighs and synthesises findings to answer a question.

Bibliometrics asks

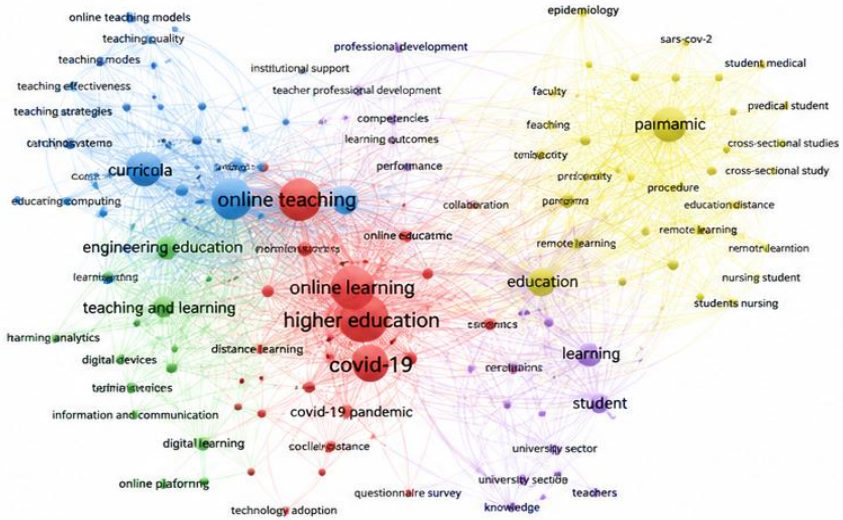
"What does the field look like?"

Who, what, when and how it all connects. It maps, it doesn't conclude.

Where AI actually sits: at the edges.
Query design, cluster labelling and the write-up, The network maths belongs to VOSviewer and Biblioshiny.

Example

Network visualisation map for co-occurring keywords



A strong theme of technological tools and platforms in virtual teaching. Keywords like "active learning," "collaborative learning," "flipped classroom," "engagement," and "pedagogy" point towards another theme focused on effective teaching and learning strategies and approaches in the virtual environment. This can suggest efforts to incorporate engaging and interactive pedagogy for student engagement and satisfaction (Chamorro-Atalaya, 2021). Keywords like "assessment," "online assessment," "feedback," and "student engagement" indicate research in areas of research and assessment with a concern for measuring and improving learning outcomes in virtual settings. The presence of keywords like "qualitative research," "survey," and "perception" suggests diverse research methodologies used to understand experiences and outcomes in the context of online education.

BIBLIOMETRIC ANALYSIS

Five steps, start to finish

1

Data

Collect from databases and export the records.

2

Clean

Deduplicate and standardise the data to ensure quality.

3

Analyse

Run bibliometric and network analyses to extract patterns.

4

Visualise

Create maps, charts and timelines to see the big picture.

5

Interpret

Make sense of the patterns and turn them into meaning.

AI helps most at the ends. **It shapes the query, then helps name and explain the clusters.**

Getting the data: the real cost barrier

Scopus and Web of Science are the gold standard but paid. Need institutional access.

OpenAlex

FREE

250M+ scholarly works

Open data, a clean web interface plus an API. A credible replacement for Scopus and Web of Science.

- Open and free
- API access
- Transparent and reliable
- Easy to download

Lens.org

Free. Patents and scholarship together.

Dimensions

Free tier with broad coverage.

Publish or Perish

Free metrics pulled from Google Scholar.

BIBLIOMETRIC ANALYSIS

Analysis and visualisation

CiteSpace

TRENDS & BURSTS

Spots bursts, timelines and the hotspots that are only just emerging.

- Detect bursts
- Timeline view
- Find hotspots

Biblioshiny

WHOLE PIPELINE

No-code front end for the Bibliometrix R package. Annual output, thematic maps, trend topics, collaboration. The lot.

- Import & clean
- Analyse & model
- Explore & report
- Export results

VOSviewer

NETWORK MAPS

Builds and visualises networks: co-authorship, keyword co-occurrence and co-citation.

- Network visualisation
- Cluster analysis
- Explore connections

BIBLIOMETRIC ANALYSIS

AI-assisted interpretation

1 Hand it the cluster

Drop the cluster's keywords into an **AI chat tool**. Ask for **candidate labels** and a **first-draft narrative** of what ties them together.

2 Then catch it being wrong

Suggested label

Online learning assessment

Check for:

- Does it fit the papers?
- Is anything important missing?
- Is it too broad or too narrow?

The labels are suggestions, not answers. A model will name a cluster confidently and miss the point. **You own the interpretation**.

BIBLIOMETRIC ANALYSIS

What can go wrong

Author disambiguation

Same name, different people.
Different spellings, same person.
Left alone, it skews every count.

Check author profiles.
Verify names before you trust the numbers.

Messy data

Clean the export before you map it.
Rubbish in, confident **rubbish** out.

Deduplicate. Standardise. Filter. Then visualise.
Garbage in, garbage everywhere.

Over-trusting AI labels

A model will name a cluster with total confidence and be wrong.
Read the papers, then decide.

Use AI as a starting point, not the final word.
You own the interpretation.

RESEARCH • IMPACT • INNOVATION

Thank You

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> Not merely for speed,
> but for **improved quality.**