#### Al Tools for Systematic Review



Shaping the Future: The Impact of AI in Social Science Libraries

Al Tools for Systematic Review: Opportunities and Challenges



#### Al Tools for Systematic Review

#### **About Me**



## Systematic Review

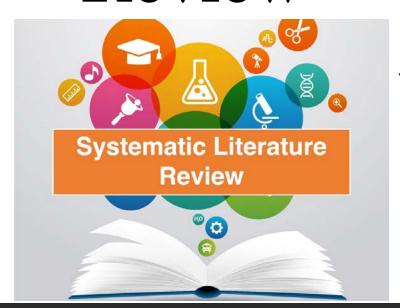
- PhD in Library & Information Science
- 35 Research Publications
- 07 (Papers related to AI)
- 990+ Citations on Google Scholar
- h-index, 15,
- i10-Index 18

Muhammad Yousuf Ali
PhD (Library & Information Science)
Associate Librarian
The Aga Khan University Karachi



#### Al Tools for Systematic Review

## Systematic Review



"AI will not replace humans, but those who use AI will replace those who don't." –



Ginni Rometty
Former CEO IBM



#### Content

## **AI Tools for Systematic Review**



- Background
- Introduction
- Librarians/Researchers Need AI Tools for SR
- Induction of AI in a systematic Review
- Al tools for systematic Review
- Librarian Role in Systematic Review
- Opportunity for Librarians
- Challenges for Librarians
- Recommendations
- Q/Answer





#### Background

#### AI Tools for Systematic Review

**Industry Revolution 4.0** 

Industry Revolution 4.0 Report published in the McKinsey Global Survey (2020).



Human-machine interaction: Artificial Intelligence, virtual reality (VR) and augmented reality (AR), autonomous guided vehicles, robotics, and automation become part of our daily life

#### Background

## **AI Tools for Systematic Review**



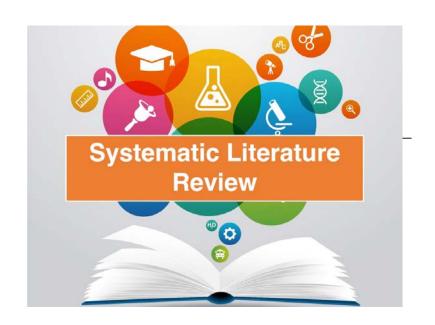
#### **Industry Revolution 4.0**

IR4.0 made a significant impact on the Research and library industry, and different tools have been invented, which change the paradigm of research.



#### **SR Literature**

#### AI Tools for Systematic Review





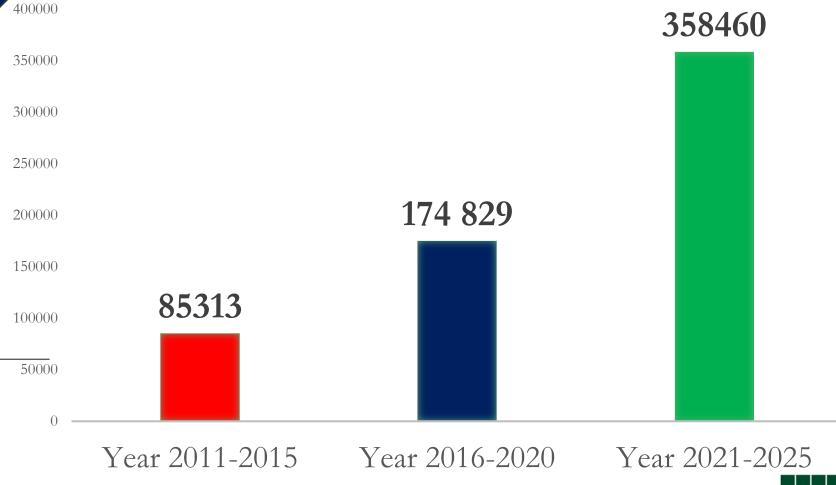
**Source Scopus Database = 618612** 



#### **SR Literature**

#### AI Tools for Systematic Review

#### SYSTEMATIC REVIEW PUBLISHED LAST 15 YEARS



**Source Scopus Database = 618612** 



#### **Al Significance**

#### AI Tools for Systematic Review

Al-based tools have seen significant growth in research.



- Publication Industry
- Scholarly Communication
- Researcher Assignment
- Scholarly profile impact



#### Needs

## Why Librarians/Researchers Need AI Tools for SR.

#### **AI Tools for**

**Systematic Review** 



- Reduces time and manual effort
- Enhances objectivity and replicability
- Synthesis and Summary
- Reduce the research team size
- Meet the deadlines
- Efficiency
  - Allows for real-time updates with new publications



#### Al tools for Systematic review

## What tools are used in a systematic review?

#### **AI Tools for**

**Systematic Review** 



- 1. AI-based Search Engine
- 2. Al-supported Databases
- 3. Al-related Literature synthesis software
- 4. Al-driven Academic Writing Tools
- 5. AI-driven Reference Management Tools
- 6. Al-associated tools for Paraphrasing
- 7. Al guide for Journal Finder



#### Al Research Search Engine

## **AI Tools for Systematic Review**



#### Al-based Search Engine

An AI search engine utilizes artificial intelligence technologies like machine learning and natural language processing to deliver more relevant and accurate search results than traditional search engines.



#### Al Research **Search Engine**

#### AI Tools for **Systematic Review**

#### AI-based Search Engine

Semantic Scholar V



Semantic Scholar

Perplexity Al



Consensus



Copilot



You.com







## Al Bibliographical databases

#### AI Tools for Systematic Review



#### AI-based Bibliographic Database

An artificial intelligence (AI) based bibliographic database combines the power of AI with the traditional concept of a bibliographic database to enhance searching, organizing, and managing research literature.

Al algorithms are used to analyze and categorize bibliographic data, improve search accuracy, and provide automated literature reviews.

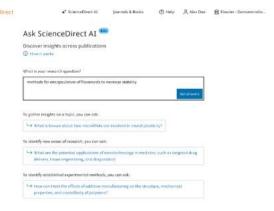
## Al Research Search Engine Al Tools for Systematic Review



#### AI-based Database

- Scopus Al
- ScienceDirect Al. Eureka
- EBSCO Discover
- Taylor & Francis
- Sage
- Dimensions







# Literature Synthesis AI Tools for Systematic Review

# SYSTEMATIC AND CHITERIA CONFURNING SHEVIEWERS: DISCHARGE CONFURNIN

## AI-based Software Literature Synthesis/Summary

Al-based literature synthesis software uses artificial intelligence and machine learning to help researchers efficiently synthesize and understand large volumes of literature. These tools can summarize key findings, identify relevant studies, and even assist in generating research questions or hypotheses.



## **Literature Synthesis**

AI Tools for Systematic Review



#### Al-based Software Literature Synthesis/Summary

ASReview





- MAXQDA
- Scispace
- Scite
- Elcite













SCISPACE



## Academic Writing

#### Al-based Academic Writing/Paraphrasing

#### AI Tools for

**Systematic Review** 



Al can provide examples of many different written outputs. You may find this useful in identifying different styles of writing, appropriate to different tasks. Feedback on your writing. Al can provide rapid feedback on your writing, and this can be helpful for improving it, e.g. in relation to grammar and structure.



## Academic Writing

## **AI Tools for Systematic Review**

#### Al-based Academic Writing/Paraphrasing

Grammarly



Wordvice



ChatGPT



Quilbot



Gemini







#### Citation and Reference Management

## **AI Tools for Systematic Review**



#### Al-based Citation Management tool

An Al-based reference management system utilizes artificial intelligence to automate and enhance the process of organizing, citing, and managing research materials. These systems leverage Al to streamline tasks like metadata extraction, citation formatting, and even provide Al-powered research assistance, making research more efficient and insightful.

#### **Citation and Reference** Management

#### Al-based Citation Management tool

#### AI Tools for **Systematic Review**





**PaperPal** 



Citation Machine<sup>®</sup>

Sourcely











**Zatero** 





#### Citation and Reference Mangement

#### **AI Tools for Systematic Review**



#### Al-based journal FINDER TOOLS

An AI-based journal finder uses artificial intelligence to recommend suitable journals for publishing research papers based on the paper's content and keywords.



#### Citation and Reference Mangement

#### AI-based journal FINDER TOOLS

**AI Tools for** • Systematic Review

Trinka Journal Finder



Elsevier Journal Finder





Publication Recommender

**IEEE**Publication Recommender<sup>™</sup>

—Sage



Springer Journal Suggester



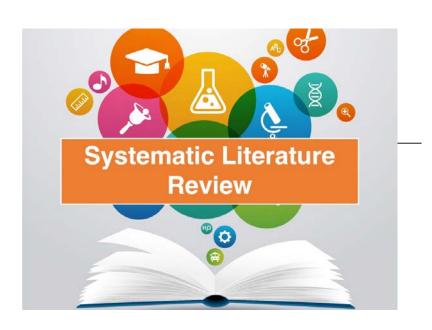
Wiley journal finder





#### AI Tools

#### AI Tools for Systematic Review



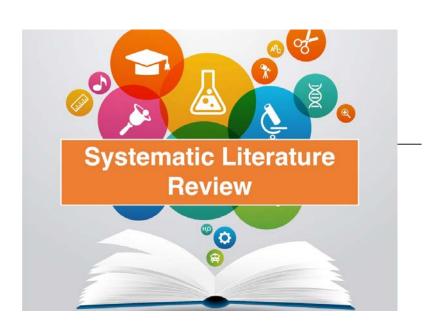
#### Quiz 1

- MAXQUADA is a \_\_\_\_\_Software
- a. Literature Synthesis
- b. Reference Management
- c. Data Analysis
- The correct option is a Literature synthesis



#### Al Tools

#### AI Tools for Systematic Review



#### Quiz 2

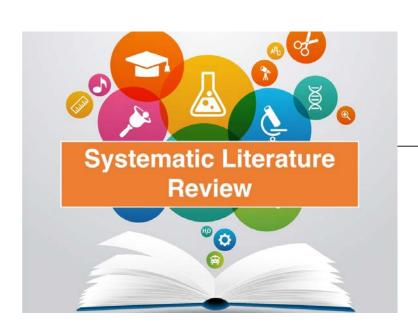
- Semantic Scholars is a
- a. Journal find tools
- b. Reference tools
- c. Search Engine
- The correct option is C Search Engine



#### Librarian Roles

#### AI Tools for

**Systematic Review** 



- 1. As Subject Matter experts
- 2. Knowledge and Application of AI Tools
- 3. Design Al Literacy Program
- 4. Al Literacy Sessions
- 5. Prompt Writing
- 6. Best Practices
- 7. International Guidelines



#### AI Tools for Systematic Review



1. As a Subject Matter expert In the systematic review process, the librarian's role as a subject matter expert in respective topics and areas, s/he can assist the researcher(s)/ research team. Al tools support librarians to become subject experts.

AI Tools for Systematic Review

2. Help in developing in Search strategy
Familiarity with the research terminology,
Subject headings and keywords. This is
basic task always librarian support to
library patron in developing Search
strategy.

Search strategy structure like PICO, PPC, SPIDER search build on Generative AI TOOLS





## **AI Tools for Systematic Review**

Analyze & Evaluate Al

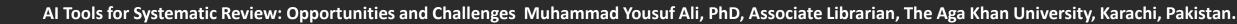
Use & Apply Al

**Understand AI** 



- 2. Mid Career Researcher
  - 3. Experts/Senior Researchers





## **AI Tools for Systematic Review**

#### 4. Al literacy session

Organzied AI Literacy session for social scientist and researcher to empower wonderful AI Tools how these tools are effective and useful for the researcher.





#### **AI Tools for**

**Systematic Review** 





A writing prompt is a direction to write about a particular topic. This may be presented in one or more sentences, or it may include a short passage, picture, or other content that serves as a starting point for the written response.

#### AI Tools for

5. Best Practices

Systematic Review
National and International level best
practices of AI literacy shared library
community





#### AI Tools for Systematic Review



#### 6. Guidelines

Libraries prepare AI Guidelines for the researcher what type of help can be seek from AI. Where the librarian role exists and limitation.

IFLA Guideline IFLA SIG-AI
CILIP published a report about AI Literacy
ALA Guidelines



## Steps of Systematic Review

#### AI Tools for Systematic Review

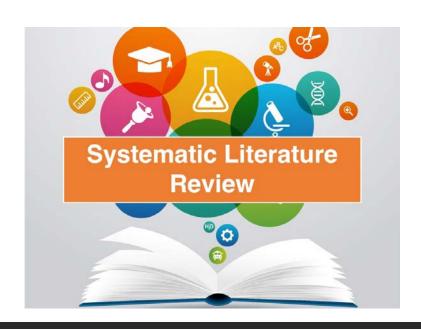
#### **Opportunity**

- 1. Learning opportunity with AI tools.
- 2. Technical skills and research skills
- 3. Research collaboration as a co-author
- 4. multidisciplinary research team
- 5. Active contribution
- 6. Library positive image recognized



## Steps of Systematic Review

#### AI Tools for Systematic Review



#### **Challenges**

- 1. Al infrastructure
- 2. Funding
- 3. Technology Fear
- 4. Lack of Support from the IT Team
- 5. Licenses and Subscription
- 6. Job Security



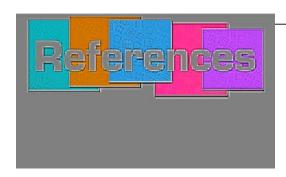
#### Recommendations



- 1. Al literacy course designed for the researcher and library users.
- 2. Prepare guidelines for the usage of AI tools and systematic review national and international levels
- 3. Training and workshops for the librarian on the effective use of AI Tools in research.
- 4. Al Tools related Libguides for the users, 24/7 access.
- 5. Literature synthesis services not limited to systematic review include scoping, rapid, narrative, umbrella, a reliant another type of review.

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- 3. Collins, C., Dennehy, D., Conboy, K., & Mikalef, P. (2021). Artificial intelligence in information systems research: A systematic literature review and research agenda. *International Journal of Information Management*, 60, 102383.



4. Wilkinson, J. (1986), "Database in Artificial Intelligence", Online Review, Vol. 10 No. 5, pp. 307-315. https://doi.org/10.1108/eb024224



## Connect me

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Website http://profileusuf.wordpress.com



n



5minutes Information Channel https://www.youtube.com/c/MuhammadYousufAli

## Connect me





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