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The Distribution of Legal Research Topics on Artificial Intelligence: A Bibliometric Study

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Abstract. *This study aims to determine the distribution of legal research topics related to Artificial Intelligence. This study uses the lens of an indexing institution, to find raw data on the research distribution. The method used is Bibliometric analysis. The results of the research found that this study showed the keywords (Co-Occurrence) were divided into 3 clusters which had a total of 49 topics. Based on the collaboration of authors (Co-Authorship) has 1 cluster which includes 194 authors. Out of a total of 385,943 search results for scientific work, the most prolific author is Wei Wang with 361 documents created by journal articles. Meanwhile, research with the keyword Artificial Intelligence experienced fluctuating developments and the most publications occurred in 2022 with a total of 42,483 publications.*

Keyword – Artificial Intelligence, Bibliometrik, Vosviewer

I. INTRODUCTION

In this era of increasingly advanced technology, artificial intelligence (AI) has experienced rapid development.[1] AI has changed the way we live, work, and interact with the world around us. Advances in computing, data processing, and machine learning techniques have enabled the use of AI in various fields, including law.[2] The application of AI in law has great potential to help understand and analyze complex legal issues. With its ability to process and analyze data quickly, AI can help legal experts evaluate evidence, find relevant patterns, and identify important information in legal cases.[3]

This can speed up the legal research process that previously took a long time. In addition, AI can also provide innovative solutions in the legal process.[4] For example, in dispute resolution, AI can be used to perform data analysis and provide predictions about the potential outcome of a case. This can help lawyers and parties make more informed decisions and minimize risks.

The use of AI in law also raises some challenges. One of them is ethical and privacy concerns.[5] In processing sensitive legal data, it is important to ensure that AI operates fairly, transparently, and in accordance with applicable laws. Data protection and individual privacy must also be carefully considered so that sensitive information does not fall into the wrong hands.

Overall, artificial intelligence has great potential to transform and improve the legal field. With its ability to process data, analyze legal issues, and provide innovative solutions, AI can be a valuable tool for legal experts to improve efficiency and quality in the legal process. However, the use of AI in law must also be balanced with proper policies to ensure fairness, legitimacy, and safety in its application.[6]

In the academic world, bibliometrics is the study of quantitative measurement and analysis of scientific publications. Bibliometric studies are important in the context of AI, as they can provide in-depth insight into

the development and distribution of research in the field of law related to AI. [7] Through bibliometrics, researchers can analyze dominant trends, topics, and research focuses, as well as identify research gaps that need to be filled. The urgency of a bibliometric study on the topic distribution of legal research on AI is to explore the greater potential for the use of AI in the legal field and to improve understanding of the challenges and opportunities in applying AI ethically and effectively in the legal system.[8]

A number of previous studies have been conducted to analyze and understand the distribution of legal research topics related to AI. The methods used in these studies include bibliometric analysis, which involves identifying the most prolific journals in AI legal research publications, measuring the impact of the research, as well as identifying the main research topics that have been researched. [9]

Through bibliometric analysis, these studies can reveal trends and patterns in the development of AI legal research. They can identify the journals that most frequently publish high-quality articles in this field, as well as identify the most influential authors in the academic community.[10] In addition, these studies can also measure the impact of AI legal research by analyzing the number of citations received by the articles. This gives an indication of how much the research contributes to the AI law literature and how important it is in the development of knowledge.[11]

These studies also help identify key research topics that have been researched in the field of AI law. For example, topics such as AI-related legal policy, AI ethics, data privacy and security, AI legal liability, and social impact of AI may be common research foci in the AI law literature. By understanding this distribution of research topics, future research can be directed towards exploring aspects that have not been covered or deepening the understanding of existing topics. Thus, previous studies on the topic distribution of AI law research serve as a guide and provide an understanding of the progress of AI law research and help determine the direction of future research in this field.[12]

This research aims to conduct a bibliometric study on the distribution of legal research topics in AI. Some of the problem formulations that will be answered in this study include, what are the most dominant legal research topics in the context of AI, how is the distribution of legal research on AI based on the year of publication and the country of research, what are the most productive journals in the publication of AI legal research, the main purpose of this study is to provide a more comprehensive understanding of the development of AI legal research, as well as to identify legal research topics in AI.

Bibliometric theory refers to an approach that uses quantitative analysis of bibliographic information, such as scientific publications, to understand trends and patterns in the development of research in a field. This theory aims to measure, analyze, and visualize bibliometric data with the aim of gaining better insight into the distribution of research, collaboration between researchers, and the main research topics that have been studied. In the context of this study, bibliometric theory was used to analyze the distribution of AI legal research topics. By collecting and analyzing data from primary sources, such as scholarly articles and conference papers relevant to the topic, researchers can identify the most researched research topics and illustrate the relationship between these topics.

II. METHOD

The methods used in this study include bibliometric analysis and the use of VOSviewer software to visualize and analyze the data. First, the initial step in this research is to collect primary sources from indexing lenses related to AI legal research. These primary sources include scholarly articles, conference papers, and possibly theses or dissertations relevant to the topic. The search was conducted using the keyword "Artificial Intelligence" and possibly related keywords such as "Legal Artificial Intelligence" or "AI in Law".

Furthermore, the data generated from the search will be imported into the VOSviewer software. VOSviewer is a tool that can be used to analyze and visualize bibliometric data. In this study, VOSviewer will be used to identify the main research topics that have been researched in the field of AI law and illustrate the relationships between these topics. Once the data has been imported into VOSviewer, the next step is to perform data analysis and visualization.

VOSviewer will assist in identifying key research topics by analyzing the frequent occurrence of keywords in the titles or abstracts of articles related to AI law. The results of such analysis will enable researchers to identify the most relevant and significant research topics in the field of AI law. In addition, VOSviewer can also be used to visualize the relationships between research topics. For example, using

cluster analysis, VOSviewer can help identify groups of research topics that frequently co-occur or have strong linkages..

III. RESULT AND DISCUSSION

Based on the analysis results from Lens.org, 385,943 scientific papers were found related to the keywords "Artificial Intelligence" and "law". The results of this study show that there is a link between the development of artificial intelligence and legal aspects. Research in the field of artificial intelligence and law is becoming increasingly important along with the rapid development of technology. For example, the development of artificial intelligence has raised various ethical and legal questions related to privacy, security, and the social and economic impacts that may arise.[13]

In the spread of research, there are some interesting findings. Some scientific works examine the influence of artificial intelligence on the field of law, such as the use of algorithms in the justice system, the use of artificial intelligence in legal analysis, and the legal implications associated with the use of artificial intelligence technology. In addition, some studies also highlight legal issues related to the development and implementation of artificial intelligence. Examples are studies on data privacy policies in the context of artificial intelligence, legal liability in cases of accidents involving autonomous vehicles, and protection of intellectual property rights in the development of artificial intelligence technology.[14]

An analysis of Lens.org shows that there are many studies that connect artificial intelligence with legal aspects. In an era where artificial intelligence is increasingly integrated in various aspects of life, a deeper understanding of its legal implications is crucial to ensure the ethical, safe and regulatory compliant use of this technology.[15]

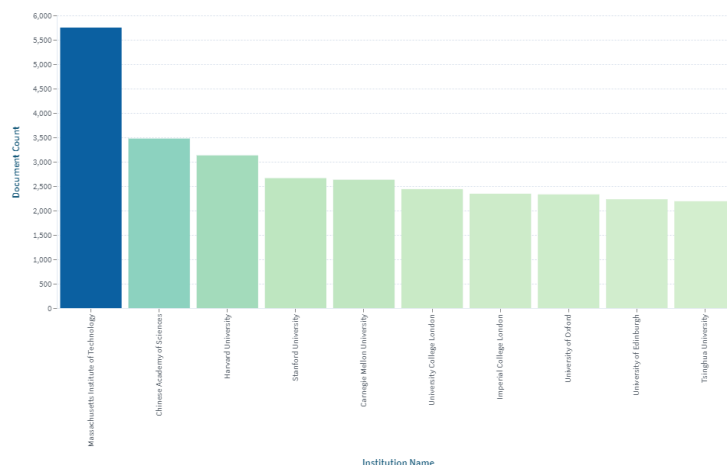
Based on the analysis of research distribution from Lens.org, some interesting findings can be identified. First, there is a list of top institutions contributing to research related to artificial intelligence and law. These institutions have significant contributions in producing scientific work in these fields. In addition, the analysis also looked at the development of research over time. This provides an overview of research trends and the extent to which researchers' interest in artificial intelligence and law has evolved over time.

There is also research related to the top fields of study in the context of artificial intelligence and law. This research covers a wide range of disciplines, such as computer science, law, public policy and ethics. Furthermore, the analysis also highlights the fields of study most addressed by the most active institutions. This provides insight into the research focus of these institutions and can identify dominating research trends in the context of artificial intelligence and law. In addition, the analysis also reveals the authors who are most active in research related to artificial intelligence and law. These authors may be experts or leaders in the field, who consistently contribute quality scholarly work. [16]

Through the scatter plot provided, the analysis provides a visualization of the distribution of scientific papers related to artificial intelligence and law. These scatter plots can help in identifying patterns and trends in research as well as the interrelationships between variables. The research distribution analysis also highlights the countries/states that are most active in producing AI and law-related papers. This can provide insights into research centers and the level of engagement of countries/states in developing knowledge in this field.

The analysis reveals the top publishers that publish scholarly works related to artificial intelligence and law. These publishers play an important role in disseminating knowledge and facilitating information exchange among researchers. Finally, the research distribution analysis also highlights the top journals based on their publishers. These journals may be internationally recognized platforms for publishing research related to artificial intelligence and law, and they can be an important reference for researchers looking to publish their research. This can be seen from Figure 1 to Figure 9.

Figure 1. Top Institution Name



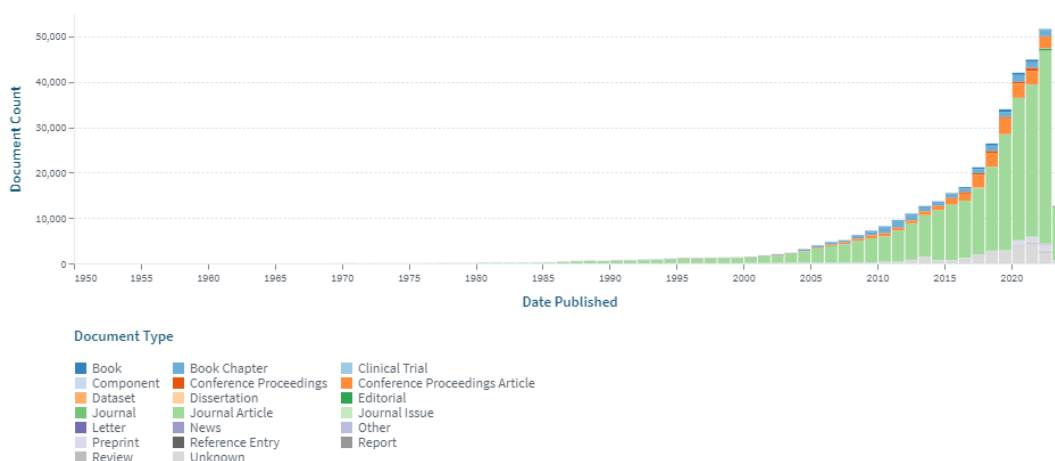
Source : Lens.org (2026)

The distribution of Artificial Intelligence (AI) research across leading institutions in the world can be seen from the ranking of institutions based on the number of AI-related publications. Here are some of the top institutions contributing to AI research: Massachusetts Institute of Technology (MIT) (5,750): MIT is one of the leading institutions in AI research. With a high number of publications, MIT has been instrumental in developing various fields of AI, including machine learning, computer vision, and natural language processing.

Chinese Academy of Sciences (CAS) (3,475): CAS is a leading research institution in China that also focuses on AI research. With a significant number of publications, CAS has contributed to the development of AI technology in both academic and industrial contexts. Harvard University (3,130): Harvard University also plays an important role in AI research. Through their computer science department and AI labs, Harvard has produced groundbreaking research in AI, including the development of AI algorithms and AI applications in various domains. Stanford University (2,663): Stanford University, located in Silicon Valley, is a center for technology research and innovation, including AI. With a strong reputation in this field, Stanford has produced significant research in machine learning, robotics, and artificial intelligence in general.

Carnegie Mellon University (2,631): Carnegie Mellon University (CMU) is a leading institution in AI research and computer science in general. CMU has been instrumental in developing new methods and algorithms in AI, as well as applying AI technology in fields such as natural language processing, facial recognition, and robotics. In addition to the above institutions, there are also others that play a significant role in AI research, including University College London, Imperial College London, University of Oxford, University of Edinburgh, and Tsinghua University. All of these institutions are actively involved in AI research and contribute to the development of AI technologies in areas such as data processing, artificial intelligence, and pattern recognition.

Figure 2. Scholarly Works Over Time



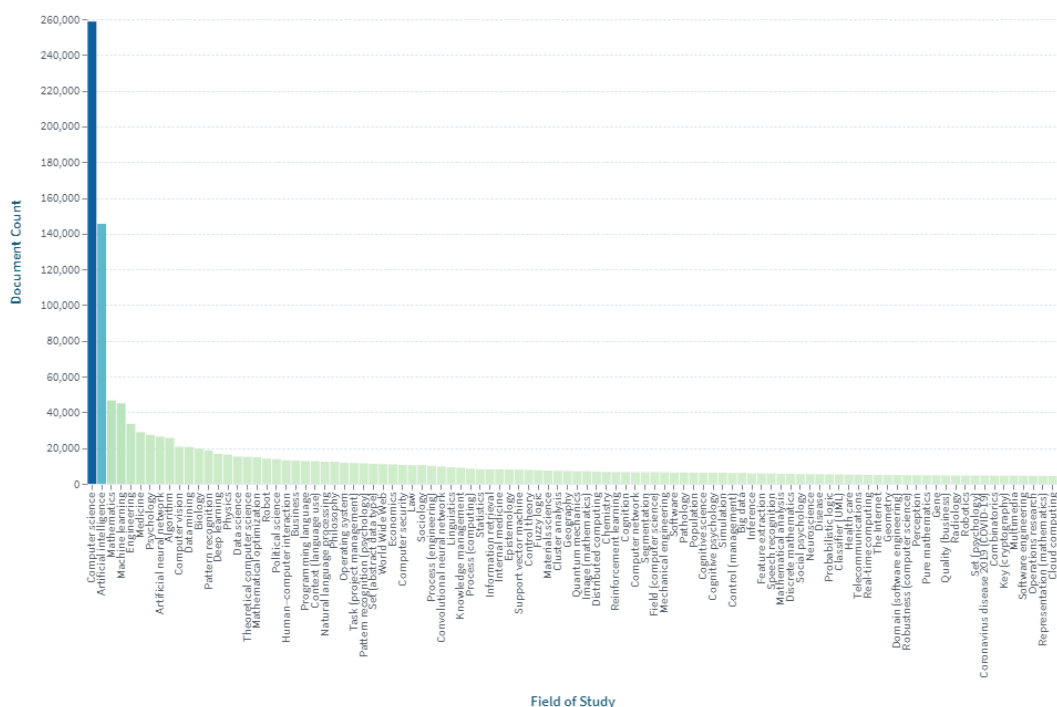
Source : Lens.org (2026)

Based on the data provided, there is a distribution of Artificial Intelligence (AI) research in various types of academic work in 2023. In the AI research category, the following is a narrative of the distribution of research based on the type of academic work. Journal Article (11,461): Journal articles are the most dominant form of academic work in AI research. In 2023, there were 11,461 journal articles related to AI. This shows the high interest and research activities in developing and studying various aspects of AI.

Conference Proceedings Article (91): Conference articles are also an important contributor to the spread of AI research. There are 91 articles in conference proceedings related to AI. These conferences provide an important platform for AI researchers to share their latest discoveries, ideas, and findings. Preprints (369): Preprints refer to research that has not gone through a formal peer review process and is published online. In 2023, there were 369 AI-related preprints. Preprints provide an opportunity for researchers to share their preliminary findings with the scientific community quickly.

Editorial (130): An editorial is a type of academic work that provides views, reviews, or guidance on a particular topic. In the context of AI research, there are 130 editorials related to AI in 2023. These editorials can provide insights and critical thinking on developments and trends in the field of AI. Report (28): Research reports also contribute to the distribution of AI research. There are 28 research reports related to AI in 2023. These reports may include more in-depth research results or present findings from specific research projects. In addition, there are other types of academic works such as book chapters, clinical trials, datasets, dissertations, letters, news, and other types that also contribute to the distribution of AI research, although not as many as journal articles. The data shows that there is an active research community in AI development in 2023. Through these types of academic works, researchers and academi.

Figure 3. Top Fields of Study



Source : Lens.org (2026)

Based on the data provided, we can see the distribution of research in the field of Artificial Intelligence (AI) and several related fields in the number of documents recorded. The following is a narrative of the distribution of AI research and related fields:

Computer Science (258,670): The Computer Science field is the dominant field in AI research. With 258,670 documents, it shows that AI is the main focus of research in this field. Research in Computer Science covers various aspects of AI, such as AI algorithm development, data analysis, and AI applications in computer systems.

Artificial Intelligence (145,488): The field of Artificial Intelligence alone has a significant number of documents, indicating a high interest in AI research specifically. Research in this field deals with the development of AI techniques and methodologies, artificial intelligence modeling, machine learning, and applications of AI in various domains.

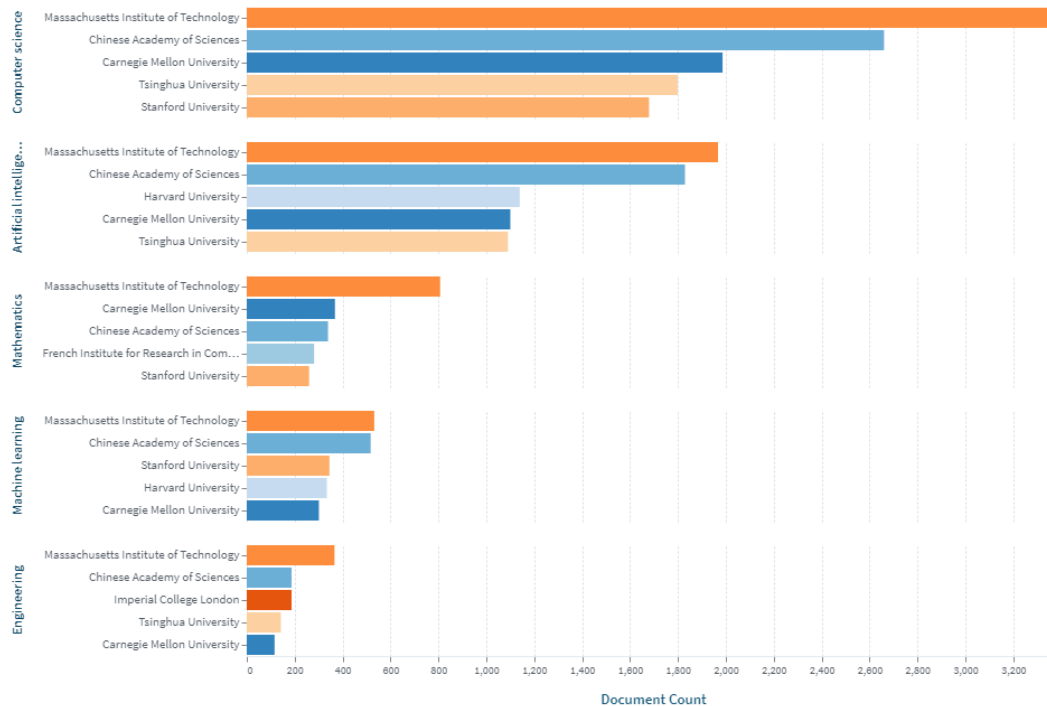
Mathematics (46,609): Mathematics also plays an important role in AI research. With 46,609 documents, mathematics is used to develop the theoretical foundations of AI, such as mathematical models for artificial neural networks, analysis of AI algorithms, and machine learning theory.

Machine Learning (44,934): Machine Learning is a sub-field within AI that is gaining significant attention. With 44,934 documents, research in Machine Learning focuses on developing algorithms and models that allow computers to learn from data and improve the performance and intelligence of AI systems.

Engineering (33,532): Engineering also contributes to AI research. In a document count of 33,532, AI research in engineering deals with the development of intelligent systems, robotics, signal processing, and AI applications in software and hardware engineering.

In addition, other fields such as Medicine (28,848), Psychology (27,349), Artificial Neural Network (26,384), and Algorithms (25,601) also contributed to AI research. Medicine includes AI research in medical diagnosis, medical image analysis, and patient care. Psychology involves AI research in human behavior modeling and understanding emotions. Artificial Neural Network and Algorithms are specific AI research focuses in the development of artificial neural network models and the development of efficient AI algorithms.

Figure 4. Fields of Study covered by the most active Institutions



Source : Lens.org (2026)

Based on the data provided, there is a distribution of Artificial Intelligence (AI) research in several leading institutions in the world. The following is a narrative about the distribution of AI research based on the field of study and related institutions:

Massachusetts Institute of Technology (MIT) - Artificial Intelligence (1,967): MIT, one of the world's leading institutions, has contributed to AI research with 1,967 documents. MIT is known for its excellence in various AI fields, including machine learning, computer vision, and AI algorithm development.

Chinese Academy of Sciences (CAS) - Artificial Intelligence (1,829): CAS, a leading research institution in China, is also active in AI research with 1,829 documents. CAS has been instrumental in developing AI technologies in various fields, including pattern recognition, data analysis, and artificial intelligence in general.

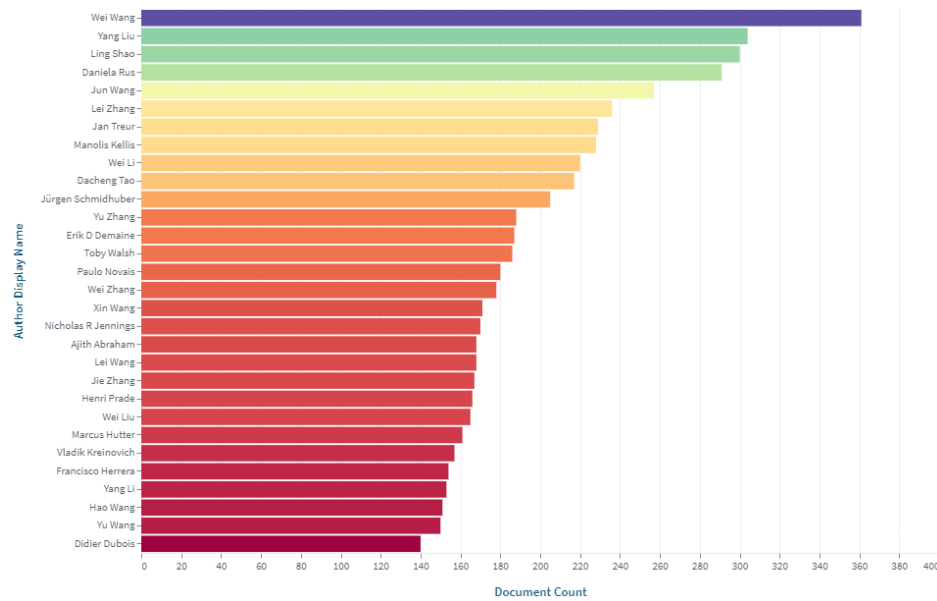
Harvard University - Artificial Intelligence (1,139): Harvard University also has a significant contribution to AI research with 1,139 documents. Through their computer science department and AI labs, Harvard has studied and developed various aspects of AI, including natural language processing, artificial intelligence modeling, and AI algorithm development.

Carnegie Mellon University - Artificial Intelligence (1,100): Carnegie Mellon University (CMU) is a leading institution in AI research with 1,100 documents. CMU has been instrumental in developing innovative AI technologies, such as facial recognition, intelligent systems, and machine learning.

Tsinghua University - Artificial Intelligence (1,090): Tsinghua University, a leading university in China, is also actively involved in AI research with 1,090 documents. Tsinghua University has contributed to the development of AI technologies, including natural language processing, data analysis, and artificial intelligence in general.

This data shows that these institutions have a high interest in AI research and play a role in developing AI technologies in various fields. AI research at these institutions covers various aspects of AI, including algorithm development, applications in industry, and theoretical understanding of artificial intelligence.

Figure 5. Most Active Authors



Source : Lens.org (2026)

Wei Wang (361): Wei Wang is a highly prolific researcher with a document count of 361. His works cover various aspects of AI and related research such as machine learning, natural language processing, and data analysis.

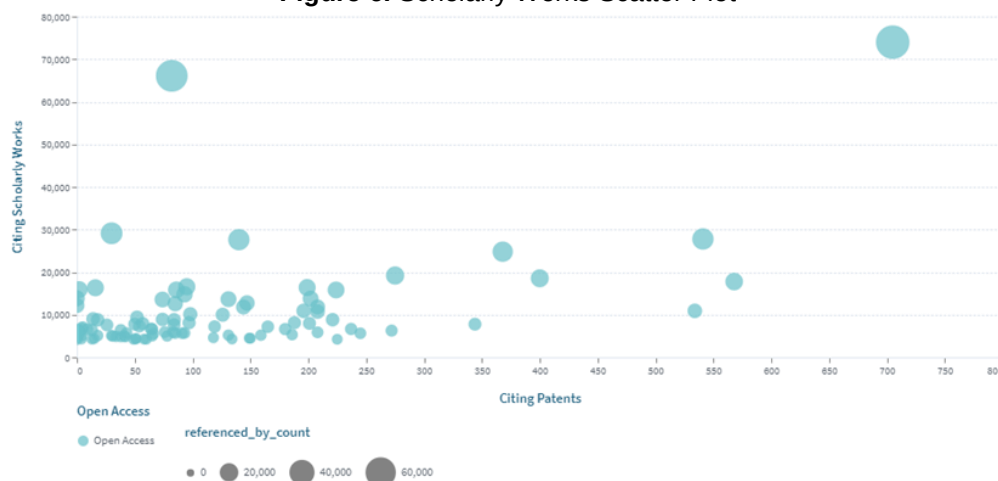
Yang Liu (304): Yang Liu is a researcher who has contributed to AI research with 304 total documents. Liu's research deals with a wide range of AI topics, including machine learning, computer vision, and natural language processing.

Ling Shao (300): Ling Shao is also a prolific researcher with 300 documents. Shao's research focuses on computer vision, pattern recognition, and image processing, as well as AI applications in these fields.

Daniela Rus (291): Daniela Rus is a researcher who has contributed to the field of AI with 291 documents. Rus' research covers robotics, autonomous systems, and the development of AI technologies in the context of physical systems.

Jun Wang (257): Jun Wang is also on the list of prolific researchers with 257 documents. Wang's research focuses on machine learning, optimization, and artificial intelligence modeling.

Figure 6. Scholarly Works Scatter Plot



Source : Lens.org (2026)

Figure 7. Most active Countries/Regions

Source : Lens.org (2026)

China - 39,432 documents: China also has a significant contribution to AI research with a high number of documents. The country has experienced rapid development in technology and AI, and many institutions and universities in China play a role in AI research.

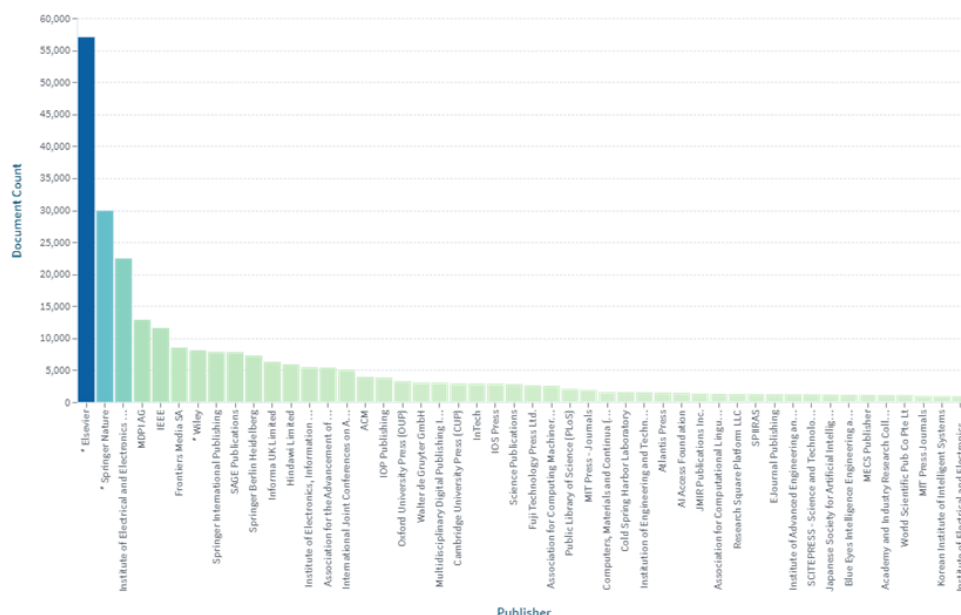
UK - 38,299 documents: The UK also occupies an important position in AI research with a significant number of documents. Institutions in the UK, such as leading universities, research centers, and government agencies, play a role in the development of AI technologies and contribute to the scientific understanding of AI.

Germany - 16,736 documents: Germany is also actively involved in AI research with thousands of documents. German institutions have contributed to the field of AI through high-quality research and collaboration between universities, industry, and research institutes.

Spain - 13,408 documents: Spain also plays a significant role in AI research. Institutions in Spain have contributed to the development of AI technologies in various fields, including computer vision, natural language processing, and pattern recognition.

Japan - 11,525 documents: Japan is also involved in AI research with a high number of documents. The country has a number of leading institutions and universities that are active in AI research and play a role in developing AI.

Figure 8. Top Publishers



Source : Lens.org (2026)

Elsevier - 57,021 documents: Elsevier is the publisher with the highest number of research documents in this dataset. Elsevier is recognized as one of the leading publishers in scientific and technical fields, including AI research. They publish journals relevant to artificial intelligence and provide an extensive platform for knowledge sharing in this domain.

Springer Nature - 29,905 documents: Springer Nature is also a publisher that plays an important role in AI research with a significant number of documents. They publish academic journals, conferences, and books covering a wide range of topics, including artificial intelligence. Springer Nature provides a platform for the publication and dissemination of AI research to the scientific community.

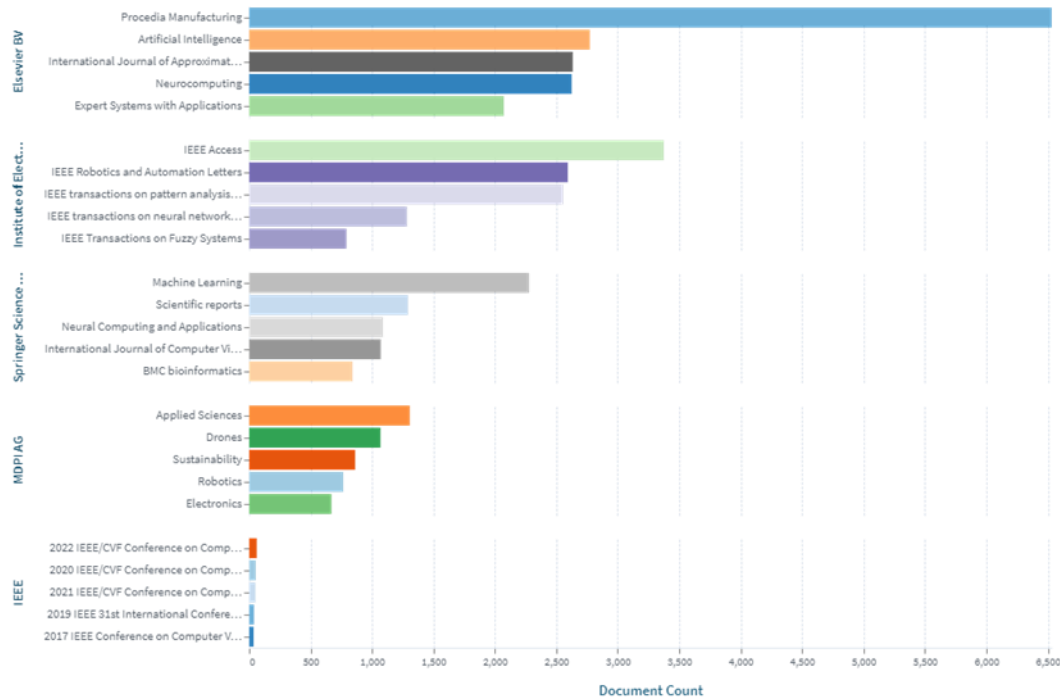
Institute of Electrical and Electronics Engineers (IEEE) - 22,427 documents: IEEE is one of the publishers that focuses on the fields of electronic engineering and computer science. They also have a significant role in publishing AI research. IEEE publishes conferences, journals, and articles covering various aspects of AI, such as machine learning, natural language processing, and computer vision.

MDPI AG - 12,847 documents: MDPI AG is a publisher that focuses on open access publishing. They have published a large number of AI research documents that are freely accessible to the scientific community. Open access publishing plays an important role in supporting accessibility and collaboration in AI research.

Frontiers Media SA - 8,501 documents: Frontiers Media SA is a publisher that focuses on an open access model and publishes interdisciplinary journals in various fields, including artificial intelligence. They have become an important platform for open AI research and invite contributions from researchers around the world.

The above-mentioned publishers play an important role in the dissemination of AI research and facilitate knowledge exchange among the scientific community. They provide a platform for publication, open access, and collaboration in the development of AI science.

Figure 9. Top Journals by Publisher



Source : Lens.org (2026)

Procedia Manufacturing 6,531 documents: "Procedia Manufacturing" is a resource title published by Elsevier BV. The journal covers research in manufacturing, including the application of artificial intelligence in manufacturing processes and production system optimization.

"Artificial Intelligence" - 2,773 documents: "Artificial Intelligence" is the title of another resource published by Elsevier BV. The journal focuses on the main topics of artificial intelligence and covers various aspects of AI such as machine learning, pattern recognition, natural language processing, and AI logic.

"International Journal of Approximate Reasoning" - 2,633 documents: "International Journal of Approximate Reasoning" is the title of a resource also published by Elsevier BV. The journal focuses on approximation reasoning, fuzzy logic, and other methods used in decision making and AI modeling.

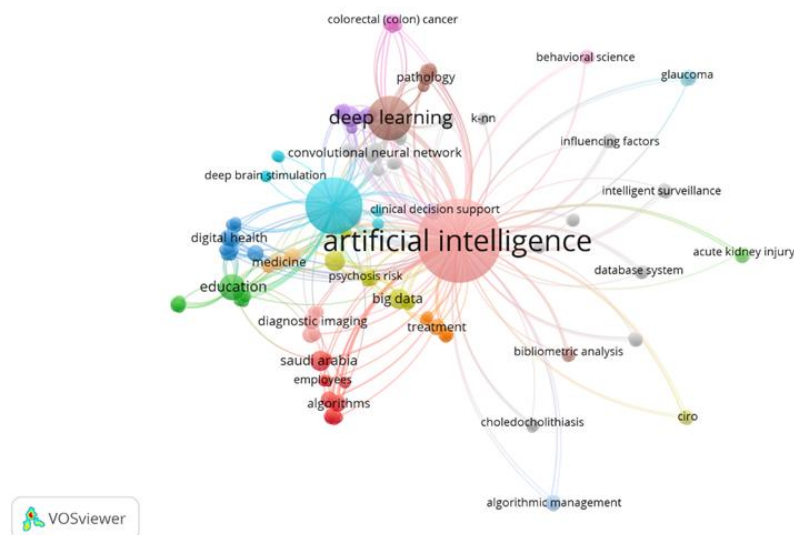
"Neurocomputing" - 2,624 documents: "Neurocomputing" is the title of another resource published by Elsevier BV. The journal combines the fields of artificial intelligence with neuroscience, and covers topics such as artificial neural networks, neural-based machine learning, and neural system modeling.

"Expert Systems with Applications" - 2,072 documents: "Expert Systems with Applications" is the title of another resource published by Elsevier BV. The journal discusses the use of artificial intelligence-based systems in various practical applications, such as pattern recognition, decision making, and expert systems.

Elsevier BV as a publisher plays an important role in disseminating AI research through various related journals. The resource titles published by Elsevier B.V. cover diverse areas in artificial intelligence and contribute to the scientific understanding and development in the field.

Cluster structure and collaboration in scientific research on Artificial Intelligence (AI) were found. In this study, Co-Occurrence and Co-Authorship methods were analyzed to identify patterns and trends related to keywords and author collaboration in AI research. The results showed that keywords were divided into three clusters covering a total of 49 topics. These clusters provide a deeper understanding of the different aspects of AI being researched. The details can be seen in Figure 10.

Figure 10. Distribution of Scientific Research on Artificial Intelligence



Source : Lens.org (2026)

The results of the author collaboration analysis revealed a cluster of 194 authors. This finding indicates a high level of collaboration in AI research, where authors work together to produce better knowledge and understanding in the domain.

Through a search of 385,943 AI-related scientific research results, this study also found that the most prolific author was Wei Wang, with 361 journal articles. Wei Wang's significant contributions to AI research demonstrate his commitment and dedication to the development and understanding of this field. In addition, an analysis of research progress with the keyword Artificial Intelligence reveals fluctuations over time. However, in 2022, there was a significant increase with 42,483 publications. This reflects the rapid growth and high interest in AI research, as well as the need to continue developing this technology.

IV. CONCLUSION

This study successfully uncovered the cluster structure and collaboration in scientific research on artificial intelligence (AI). The results provide valuable insights for researchers and practitioners to understand the trends, research focus, and collaboration patterns in the AI field. The increase in the number of publications in 2022 shows that AI continues to be an interesting and relevant topic. This reflects the high interest of the academic and industry communities in the potential and applications of AI in a variety of fields, ranging from healthcare to education to the creative industries. The findings also highlight the importance of collaboration between researchers and institutions. With strong networks in place, innovation in research can increase, enabling better solutions to the challenges facing society today. Researchers can utilize information on research clusters to find aligned collaboration partners, expand the scope of research, and share resources and knowledge. Going forward, with this positive trend, it is expected that AI research will continue to grow and make significant contributions to improving the quality of human life, industrial efficiency, and solving various global problems. With a better understanding of the structure and collaboration in research, it is hoped that researchers can be more strategic in determining the direction of their research, resulting in more impactful innovations.

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