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# ChatGPT and the Legal Field: the state of the art

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***ABSTRACT***

Artificial Intelligence (AI) has been used to improve daily routines and aid in the creative process. In the legal field, AI is still little used, but it has great potential to transform the daily activities of professionals. ChatGPT is a tool based on generative AI that can create content and has been used in various fields of knowledge. Given that the legal field is based on textual data, ChatGPT can present itself as a useful resource in this field. Thus, this study aims to present the state of the art of ChatGPT and the legal field in scientific literature. To achieve the proposed objective, a Systematic Literature Review was performed using a qualitative approach, inductive logic, and interpretivist epistemology. A total of 89 studies were analyzed, but only four were considered to be associated with the themes of ChatGPT and the legal field. The results of this study suggest that there is space in scientific literature to analyze the influence of generative AIs such as ChaGPT on the legal field.

***Keywords:*** *Artificial Intelligence, ChatGPT, Law, Legislation, Legal field.*

## ChatGPT e o campo Jurídico: o estado da arte

**RESUMO**

A Inteligência Artificial (IA) tem sido utilizada para melhorar rotinas diárias e ajudar no processo criativo. No campo jurídico, a IA ainda é pouco utilizada, mas tem

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grande potencial para transformar as atividades diária dos profissionais. O ChatGPT é uma ferramenta baseada em IA generativa que pode criar conteúdo e tem sido utilizada em várias áreas do conhecimento. Dado que o campo jurídico é baseado em dados textuais, o ChatGPT pode se apresentar como um recurso útil nesse campo. Assim, o objetivo deste estudo é apresentar o estado da arte dos temas ChatGPT e campo jurídico na literatura científica. Para alcançar o objetivo proposto, realizou-se uma Revisão Sistemática da Literatura por meio de uma abordagem qualitativa, lógica indutiva e epistemologia interpretativista. Um total de 89 estudos foram analisados, mas apenas quatro foram considerados como associados aos temas ChatGPT e campo jurídico. Os resultados deste estudo sugerem que há um considerável espaço na literatura científica para analisar a influência de IAs generativas como o ChaGPT no campo jurídico.

**Palavras-chave:** Inteligência Artificial. ChatGPT. Direito, Lei. Campo jurídico.

## 1 INTRODCUTION

ChatGPT is a language model developed by the company OpenAI (https://chat.openai.com/). It represents a tool rooted in generative Artificial Intelligence (AI) (LIM *et al.*, 2023) that facilitates user interaction with AI through a chat interface (GARNER, 2023; GREENGARD, 2022).

ChatGPT has found applications across various domains of knowledge (ADETAYO, 2023; DOWLING; LUCEY, 2023; TLILI et al., 2023) as a means to enhance the optimization of activities and processes. This is primarily due to its remarkable capacity to produce highly coherent text and engage in interactions, thereby refining its own outcomes (PAUL; UENO; DENNIS, 2023; YADAVA, 2023).

Given ChatGPT's aptitude for processing substantial volumes of text and its widespread adoption in diverse professions, it is believed to hold substantial potential in the realm of law. In the context of this study, the legal field pertains to the 'area of expertise dedicated to the examination of the laws and regulations governing society.'

Hence, within the legal sphere, ChatGPT has the potential to serve as a tool capable of responding to inquiries concerning laws and regulations, identifying analogous cases and pertinent legal precedents to substantiate legal arguments, automating repetitive tasks such as document review, or aiding in the detection of

errors and inconsistencies in documents. This, in turn, can lead to time savings and increased work efficiency.

However, it is important to note that all these possibilities are conjectures necessitating empirical validation. Therefore, the objective of this study is to provide an overview of the current state of research in the fields of ChatGPT and the legal domain within the realm of scientific literature. The central research question guiding this study is as follows: What is the current state of research in scientific literature concerning the topics of ChatGPT and its applicability in the legal domain?

## 2 DEVELOPMENT

### 2.1 Generative Artificial Intelligence

The development of Artificial Intelligence (AI) began after the conclusion of World War II, with its name being formally coined by John McCarthy in 1956, defining AI as the science and engineering of creating intelligent machines. Presently, AI can be categorized into three primary classifications: (i) Narrow Artificial Intelligence (NAI), (ii) General Artificial Intelligence (GAI), and (iii) Super Artificial Intelligence (SAI).

NAI pertains to AI systems meticulously designed for executing specific and delimited tasks (KURZWEIL, 2006, p. 560). These systems demonstrate proficiency and consistency in their assigned functions but lack the capacity to comprehend or extend their knowledge beyond the predefined scope.

On the other hand, GAI represents a form of AI that would possess the capability to undertake any cognitive task akin to a human, doing so with the same dexterity and adaptability (GOERTZEL, 2014, p. 3). GAI would be autonomous in its learning, comprehend abstract concepts, and adeptly apply its knowledge to novel situations.

Conversely, SAI denotes an AI form that substantially surpasses human intelligence across virtually all domains. It would also excel in cognitive intelligence, practical skills, and social abilities, outperforming human capabilities (BOSTROM, 2014, p. 5).

Besides the conventional categories of Narrow Artificial Intelligence (NAI), General Artificial Intelligence (GAI), and Super Artificial Intelligence (SAI), an emerging facet within the AI field is Generative Artificial Intelligence (GAIg). Generative AI, a subset of both NAI and GAI, specializes in creating systems proficient at generating

novel data, images, text, or other content types through statistical models and machine learning algorithms. Its conceptualization is attributed not to a singular individual but to multiple researchers and AI scientists who have embraced this approach in their research (GOODFELLOW; BENGIO; COURVILLE, 2016, p. 539).

As outlined by the above authors, these AI models undergo training based on extensive datasets, enabling them to generate samples closely resembling real-world counterparts. Generative AI finds applications in diverse domains, encompassing creative content generation, video game development, and the conception of novel product designs, among others.

Furthermore, generative AI has played a pivotal role in the development of novel tools and technologies, with ChatGPT serving as an exemplar. Operating as a generative AI-based tool, ChatGPT adeptly generates responses to inquiries and engages users naturally, drawing from extensive training datasets. This technology continues to gain prominence across various fields, ushering in fresh possibilities for human-machine interaction.

In tandem with the broader academic landscape, the legal field has witnessed a burgeoning adoption of AI, offering a wide array of utilities ranging from document analysis to predictive analytics for case outcomes. In this context, ChatGPT has been the focal point of research endeavors aimed at unlocking its potential across various facets of the legal domain.

## 3. METHODOLOGY

Methodologically, this study employs a qualitative approach, inductive logic, and an interpretative epistemology. The qualitative approach utilized in this study allows for a close examination of research subjects (MINAYO, 2012), facilitating the understanding and explanation of phenomena that can subsequently be applied in statistical research (MINAYO, 2012). The exploration of connections between different disciplines can be achieved through a Systematic Literature Review (SLR) (WEBSTER; WATSON, 2002). SLRs can take two formats: (i) the first format focuses on well-established and mature literature, requiring analysis and synthesis of the existing body of knowledge; and (ii) the second format deals with an emerging theme, the exposure of which would benefit potential theoretical foundations. This study

primarily aligns with the second type of SLR, as it addresses an emerging theme in the literature, such as ChatGPT.

To ensure the reliability of an SLR, Webster and Watson (WEBSTER; WATSON, 2002) recommend searching for primary contributions in major scientific journals. Consequently, a systematic search was conducted in leading scientific databases that index prominent journals, as outlined in Table 1. These searches were carried out in April 2023.

Table 1. Review of academic databases

| Database | Search string | Results | Criteria Exclusion | Criteria Inclusion |
|---|---|---|---|---|
| SCOPUS | (ALL (ChatGPT) AND ALL (law)) | 29 | 29 | 0 |
| EBSCO | TX chatgpt AND TX law | 46 | 46 | 0 |
| IEEE Xplore | ("Full Text & Metadata":ChatGPT) AND ("Full Text & Metadata":Law) | 10 | 10 | 0 |
| Google Scholar | allintitle: "chatgpt law" | 4 | 0 | 4 |
| **Overall:** | | **89** | **85** | **4** |

Source: developed by authors.

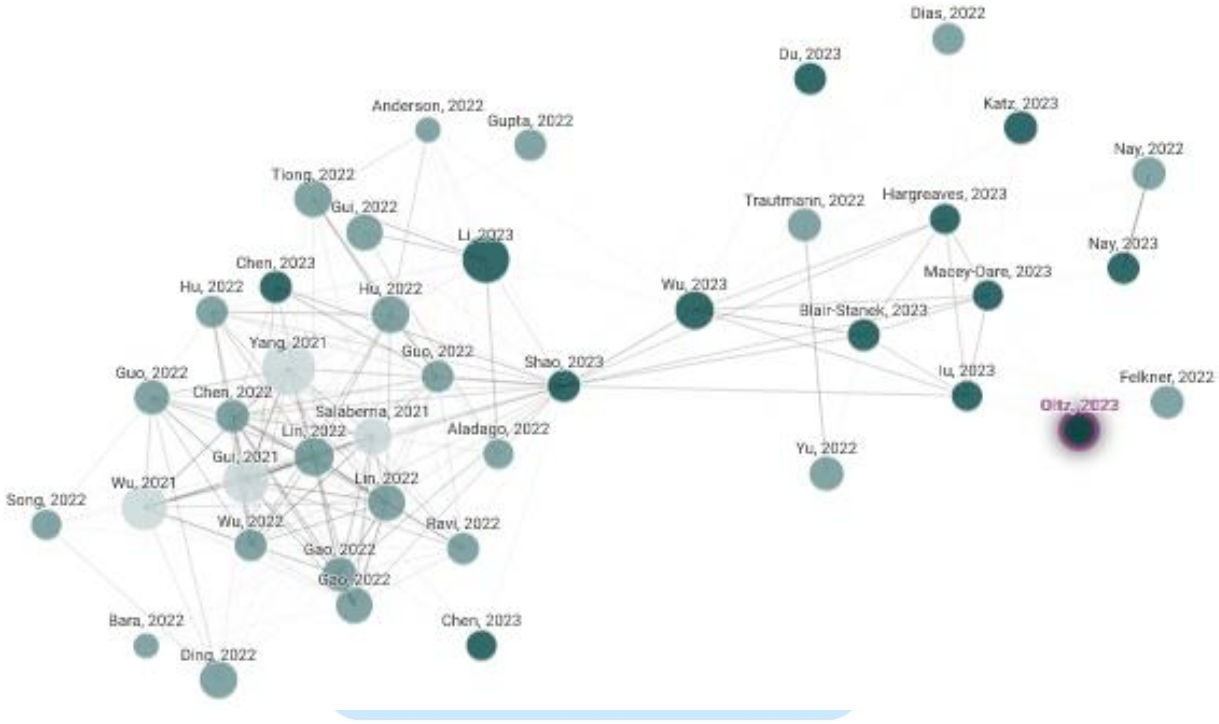
The Systematic Literature Review (SLR) conducted across databases led to the identification of a total of 89 studies. However, upon applying the exclusion criteria (studies that simultaneously addressed the topics of ChatGPT and the legal field), only four studies met the inclusion criteria.

Subsequently, after identifying studies within the prominent academic databases, our focus shifted towards recognizing seminal works and those stemming from research closely aligned with our investigated phenomenon. To attain this objective, we leveraged studies authored by Oltz (2023), Hargreaves (2023), Choi et al. (2023) on the ConnectedPapers platform. The selection of studies authored by these individuals was grounded in the publication date of their articles (all published in 2023), their direct relevance to the central theme under examination in this study

(exploring the state of the art of ChatGPT in the legal field), and their accessibility through the Google Scholar platform, as delineated in Table 1.

The ConnectedPapers platform (https://www.connectedpapers.com) serves as a visual tool designed to assist scientists and researchers in the discovery and exploration of pertinent works within their respective research domains (EITAN; SMOLYANSKY; HARPAZ, 2021). Connected Papers platform has been used in various studies as a tool to encompass a wide range of literature (e.g., FROGERI *et al.*, 2021; GAMA JUNIOR *et al.*, 2021; SASSAKI; FROGERI; OLIVEIRA, 2023; SILVA; FROGERI; ALVES, 2023). Consequently, through this platform, we generated a graph illustrating associations, as depicted in Figure 1.

Figure 1 - ConnectedPapers platform association graph




The graph depicted in Figure 1 highlights Oltz's study (2023) and its direct associations with other studies in the literature. Utilizing the studies mentioned above, a graph of co-citations and bibliographic coupling is constructed (EITAN; SMOLYANSKY; HARPAZ, 2021), suggesting that the primary studies (most frequently cited) reside within the network of relationships in the graph. Subsequently, still through the Connected Papers platform, the studies suggested as seminal, in accordance with Oltz's work (2023), are listed in Table 2.

Table 2. Seminal studies based on Oltz (2023)

| Title | First author | Year | Number of citations | Number of citations on graph |
|---|---|---|---|---|
| Language Models are Few-Shot Learners | Dario Amodei | 2020 | 9108 | 28 |
| BERT: Pre-training of Deep Bidirectional Transformers for Language Understanding | Kristina Toutanova | 2019 | 49111 | 26 |
| OK-VQA: A Visual Question Answering Benchmark Requiring External Knowledge | Roozbeh Mottaghi | 2019 | 234 | 23 |
| KRISP: Integrating Implicit and Symbolic Knowledge for Open-Domain Knowledge-Based VQA | Marcus Rohrbach | 2020 | 64 | 21 |
| LXMERT: Learning Cross-Modality Encoder Representations from Transformers | Mohit Bansal | 2019 | 1400 | 21 |
| ViLBERT: Pretraining Task-Agnostic Visiolinguistic Representations for Vision-and-Language Tasks | Stefan Lee | 2019 | 1948 | 20 |
| VQA: Visual Question Answering | Dhruv Batra | 2015 | 3616 | 20 |
| ConceptBert: Concept-Aware Representation for Visual Question Answering | F. Lécué | 2020 | 50 | 19 |
| Oscar: Object-Semantics Aligned Pre-training for Vision-Language Tasks | Jianfeng Gao | 2020 | 970 | 19 |
| Exploring the Limits of Transfer Learning with a Unified Text-to-Text Transformer | Peter J. Liu | 2019 | 6606 | 19 |

Source: Developed by ConnectedPapers Platform.

Table 2 highlights studies that have garnered a substantial number of citations and, in turn, hold significance within the literature. These studies are classified as seminal within the central theme of the foundational document (OLTZ, 2023).

Following that, Table 3 provides a list of derivative studies, namely, studies that maintain a close relationship with the work of Oltz (2023), as identified through the ConnectedPapers digital platform.

Table 3. Derivative studies based on Oltz (2023)

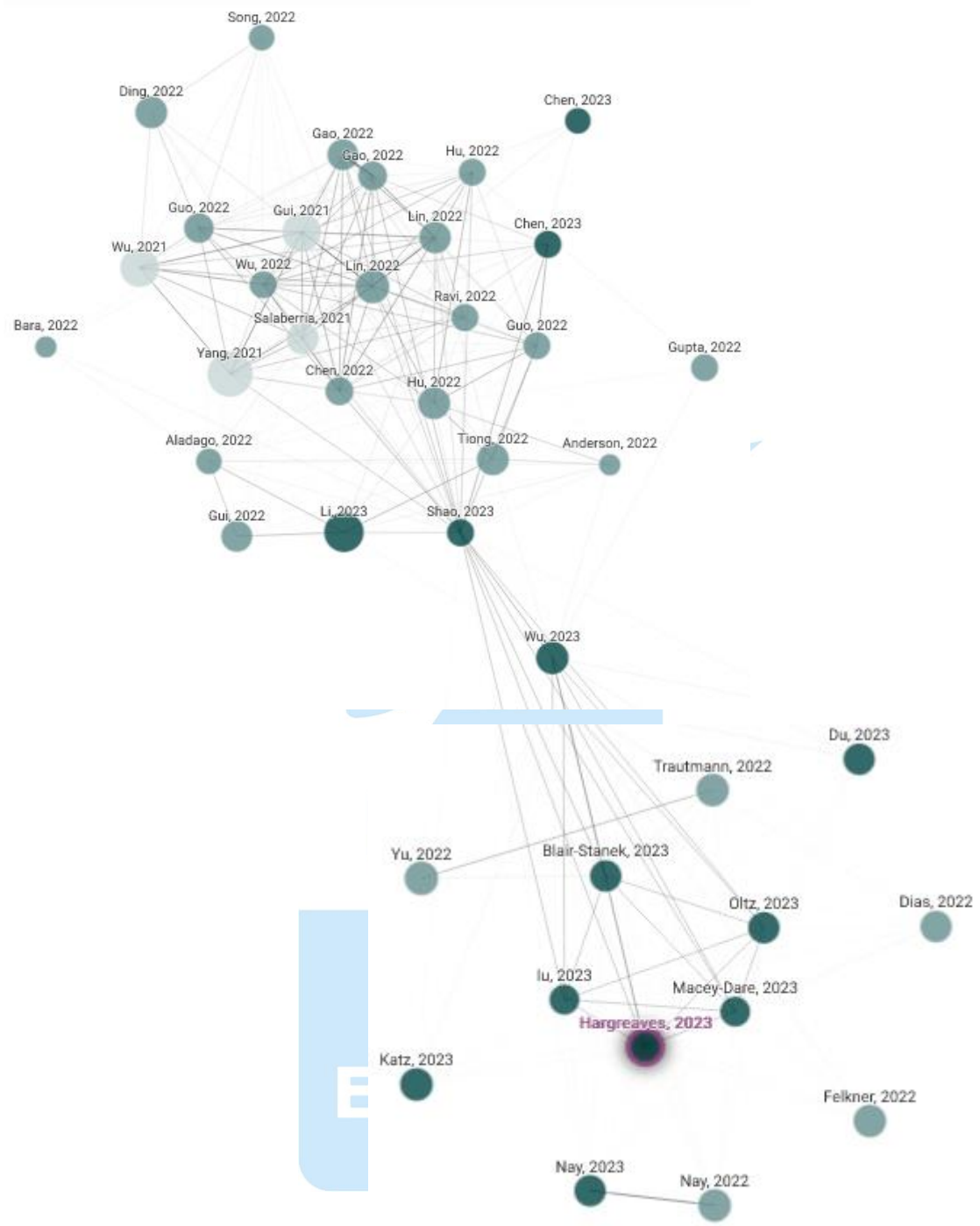
| Title | First author | Year | Number of citations | Number of citations on graph |
|---|---|---|---|---|
| A Short Survey of Viewing Large Language Models in Legal Aspect | Zhongxiang Sun | 2023 | 1 | 15 |
| The Contribution of Knowledge in Visiolinguistic Learning: A Survey on Tasks and Challenges | G. Stamou | 2023 | 0 | 13 |
| ViperGPT: Visual Inference via Python Execution for Reasoning | Carl Vondrick | 2023 | 3 | 9 |
| ICL-D3IE: In-Context Learning with Diverse Demonstrations Updating for Document Information Extraction | Hengtao Shen | 2023 | 1 | 3 |
| Differentiable Outlier Detection Enable Robust Deep Multimodal Analysis | S. Ravi | 2023 | 0 | 3 |
| A survey on knowledge-enhanced multimodal learning | G. Stamou | 2023 | 2 | 3 |
| Vision-Language Models as Success Detectors | Serkan Cabi | 2023 | 1 | 2 |
| Making a Computational Attorney | Isabelle Moulinier | 2023 | 0 | 2 |
| Interpretable Visual Question Answering Referring to Outside Knowledge | M. Haseyama | 2023 | 0 | 2 |
| IC3: Image Captioning by Committee Consensus | J. Canny | 2023 | 0 | 2 |

Source: Developed by ConnectedPapers Platform.

After analyzing the identification of the main studies related to the foundational document, Oltz's scientific article (2023), and its theoretical foundations, it was observed that only the articles by Zhang et al. (2023) and Sun (2023) have a direct relationship with the central theme of the study in question.

Subsequently, Figure 2 highlights the association graph of Hargreaves' study (2023).

Figure 2 - ConnectedPapers platform association graph



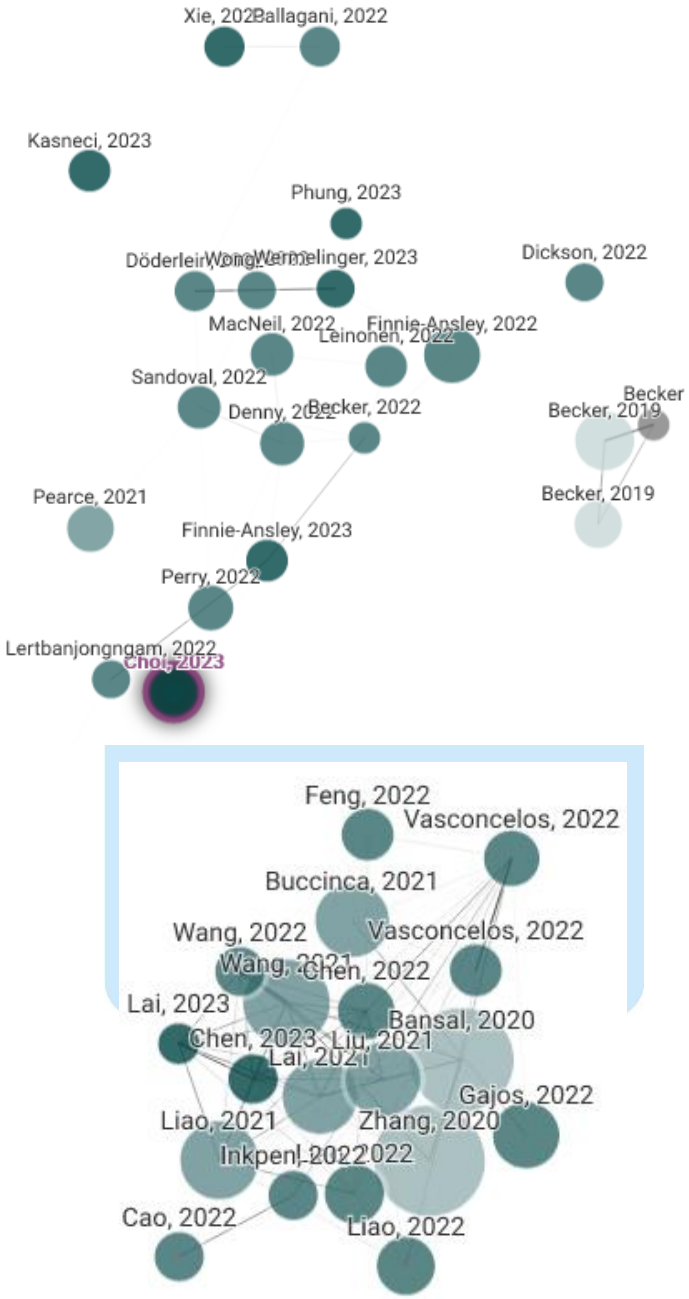

Source: Developed by ConnectedPapers Platform.

Upon a meticulous analysis of Figure 2, it can be inferred that the graph presented therein not only originates from the foundational document – Hargreaves' scientific article (2023) – but also incorporates, in its entirety, the seminal and derivative studies listed in Tables 2 and 3 of Figure 1. Considering this observation, it can be confidently asserted that the inclusion of additional tables, aimed at supplementing or

illustrating the theoretical foundation used in the research at hand, is unnecessary, as all relevant information is already adequately represented and consolidated in Tables 2 and 3.

At this juncture, Figure 3 spotlights the association graph of Choi et al.'s study (2023).

Figure 3 - ConnectedPapers platform association graph




Source: Developed by ConnectedPapers Platform.

Continuing with the methodology presented in the previous figures, the graph above illustrates direct associations with other literature studies pertaining to Choi et al.'s scientific article (2023). The seminal studies are listed below in Table 4.

Table 4: Seminal studies based on Choi et al. (2023)

| Title | First author | Year | Number of citations | Number of citations on graph |
|---|---|---|---|---|
| Proxy tasks and subjective measures can be misleading in evaluating explainable AI systems | Elena L. Glassman | 2020 | 107 | 16 |
| On Human Predictions with Explanations and Predictions of Machine Learning Models: A Case Study on Deception Detection | Chenhao Tan | 2018 | 178 | 16 |
| Evaluating Large Language Models Trained on Code | Wojciech Zaremba | 2021 | 611 | 14 |
| Language Models are Few-Shot Learners | Dario Amodei | 2020 | 8479 | 13 |
| Understanding the Effect of Accuracy on Trust in Machine Learning Models | H. Wallach | 2019 | 220 | 13 |
| Manipulating and Measuring Model Interpretability | H. Wallach | 2018 | 407 | 13 |
| "Why is 'Chicago' deceptive?" Towards Building Model-Driven Tutorials for Humans | Chenhao Tan | 2020 | 61 | 12 |
| The Principles and Limits of Algorithm-in-the-Loop Decision Making | Yiling Chen | 2019 | 147 | 12 |
| Beyond Accuracy: The Role of Mental Models in Human-AI Team Performance | E. Horvitz | 2019 | 170 | 12 |
| Explanation in Artificial Intelligence: Insights from the Social Sciences | Tim Miller | 2017 | 2485 | 12 |

Source: Developed by ConnectedPapers Platform.

Table 4 also underscores studies with a substantial number of citations, which, in turn, carry literary significance, as they are considered seminal studies within the central theme of the foundational document – the scientific article published by Choi et al. (2023).

Subsequently, Table 5 provides a list of studies derived from Choi et al.'s work (2023), as identified through the ConnectedPapers digital platform.

Table 5: Derivative studies based on Choi et al. (2023)

| Title | First author | Year | Number of citations | Number of citations on graph |
|---|---|---|---|---|
| ChatGPT and Software Testing Education: Promises & Perils | Wing Lam | 2023 | 3 | 7 |
| Knowing About Knowing: An Illusion of Human Competence Can Hinder Appropriate Reliance on AI Systems | U. Gadiraju | 2023 | 0 | 6 |
| Who Should I Trust: AI or Myself? Leveraging Human and AI Correctness Likelihood to Promote Appropriate Trust in AI-Assisted Decision-Making | Xiaojuan Ma | 2023 | 0 | 5 |
| Towards Human-centered Explainable AI: User Studies for Model Explanations | Enkelejda Kasneci | 2022 | 1 | 5 |
| On Explanations, Fairness, and Appropriate Reliance in Human-AI Decision-Making | N. Kuehl | 2022 | 1 | 5 |
| Mitigating Knowledge Imbalance in Ai-Advised Decision-Making Through Collaborative User Involvement | Chien-Ming Huang | 2022 | 0 | 5 |
| Human-AI Collaboration via Conditional Delegation: A Case Study of Content Moderation | Chenhao Tan | 2022 | 13 | 5 |
| Appropriate Reliance on AI Advice: Conceptualization and the Effect of Explanations | G. Satzger | 2023 | 1 | 4 |
| Ignore, Trust, or Negotiate: Understanding Clinician Acceptance of AI-Based Treatment Recommendations in Health Care | Adam Perer | 2023 | 1 | 4 |
| Seamful XAI: Operationalizing Seamful Design in Explainable AI | Hal Daumé | 2022 | 0 | 4 |

Source: Developed by ConnectedPapers Platform.

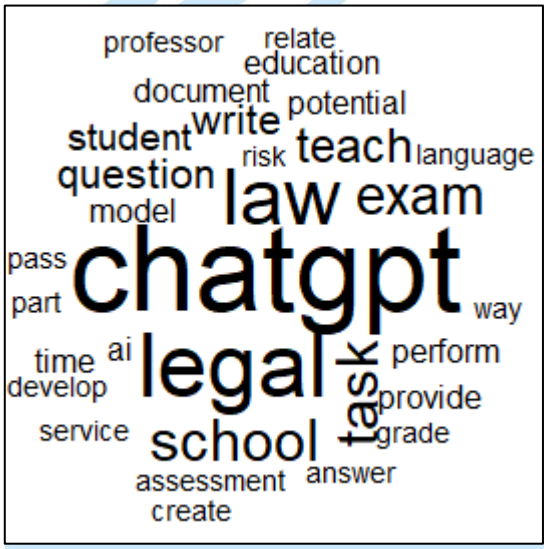
Upon examining the primary seminal and derivative studies associated with the foundational document – Choi et al.'s scientific article (2023) and its theoretical framework – it was determined that none of these works have a direct relevance to the central theme of the current study (ChatGPT and the legal field).

## 4 ANALYSIS AND RESULTS

After conducting a Systematic Literature Review (SLR), only four studies aligned with the themes of ChatGPT and the legal field were considered (e.g., BISWAS, 2023; CHOI *et al.*, 2023; HARGREAVES, 2023; OLTZ, 2023). It's noteworthy that all four studies are from 2023, and none of them have been published in a scientific journal yet. These studies are either drafts or works in progress, indicating that the subject is still in its infancy within the scientific literature and has not yet been academically formalized.

To visually observe the approaches of the selected studies, we generated a word cloud from their abstracts (Figure 1).

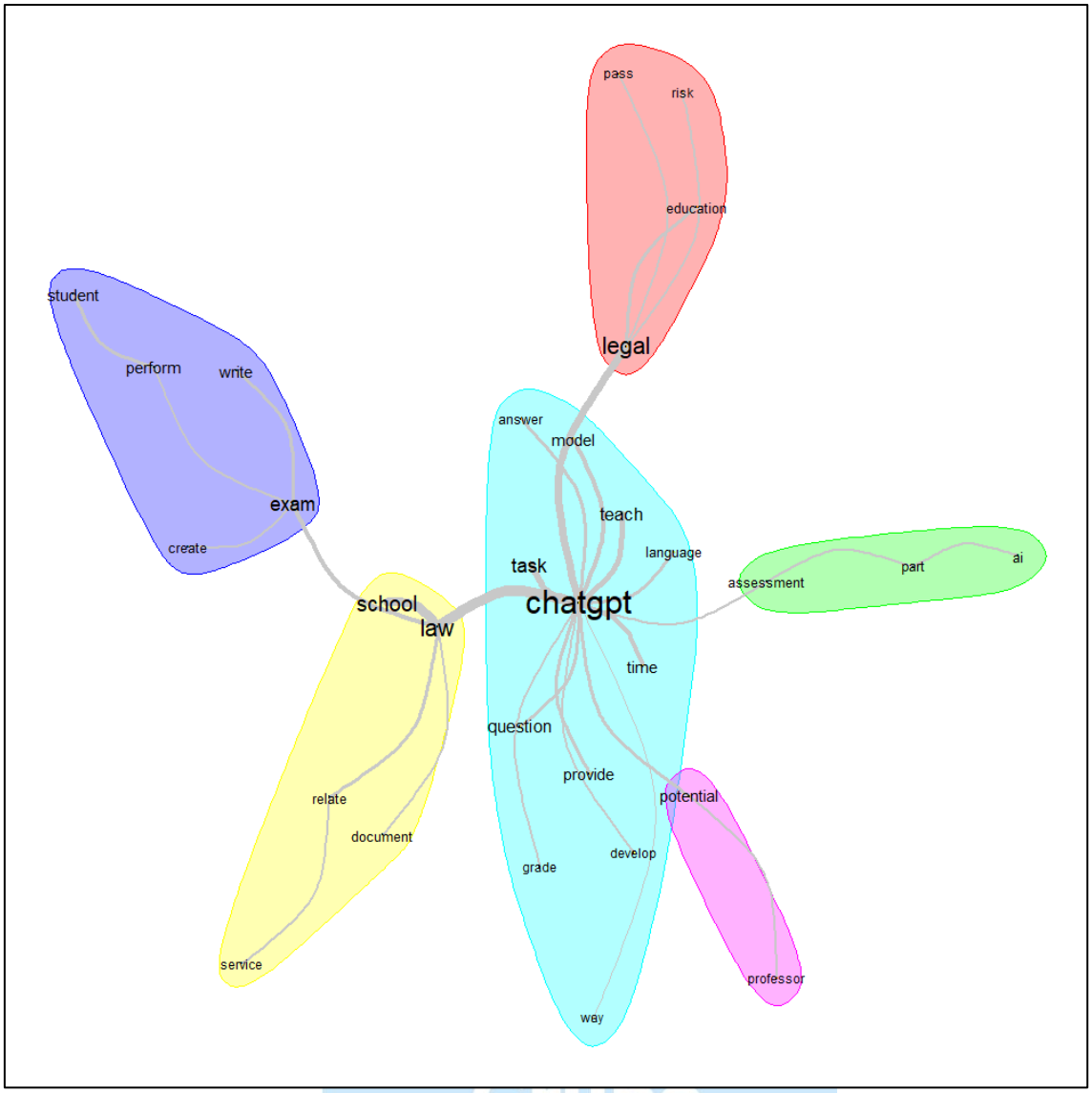
Figure 1. Word cloud of abstracts from selected articles




Source: Developed by the authors using Iramuteq software.

The word cloud prominently features the word "chatgpt" with a frequency of 21, followed by the words "legal" (15), "law" (13), "school," and "task" (9). These highly frequent words suggest that they are key terms within the abstracts of the four studies under analysis. To understand how these words are lexically related, we conducted a Similarity Analysis of the abstracts (Figure 2).

Figure 2. Similarity Analysis based on the abstracts of selected articles




Source: Developed by the authors using Iramuteq software.

The Similarity Analysis suggests that the central theme of these studies is ChatGPT, with a strong association with the terms "law," "school," and "exam." To gain a deeper understanding of the approaches taken in the identified studies through the SLR, we will discuss each of them individually in the following paragraphs.

The article "ChatGPT Goes to Law School" by Choi et al. (CHOI *et al.*, 2023) presents an experiment that evaluated the ability of the ChatGPT artificial intelligence model to answer legal exam questions without human intervention. The research was conducted at the University of Minnesota, where four exams from different areas of law were selected for the experiment: Constitutional Law, Employee Benefits, Taxation, and Torts. Based on the responses generated by ChatGPT, the researchers mixed the

exams of human students with those generated by the AI model and submitted them to the respective professors of each subject for evaluation. The results indicated that ChatGPT was able to achieve, on average, the performance of a student with a C+ grade in all exams.

The researchers also noted that the Constitutional Law and Torts exams were considered beginner-level, while the Taxation and Employee Benefits exams were advanced-level. Despite this, ChatGPT was able to provide coherent and appropriate answers, demonstrating promising potential in assisting law students. The study has significant implications for legal education and the field of law. The use of artificial intelligence models like ChatGPT can help law students improve their legal writing skills and assist professors in efficiently evaluating a large number of exams. The study also provides examples of how ChatGPT can be used in legal writing training, showcasing the technology's potential to revolutionize the field of law.

In contrast, the article "ChatGPT, Professor Of Law" by Oltz (OLTZ, 2023) from the University of North Dakota presents a study opposing the previously mentioned article, "ChatGPT Goes to Law School." In this case, the author trained ChatGPT to act as a law professor and perform service and teaching activities throughout the week. The assigned tasks included writing a letter of recommendation for an outstanding student in a Torts exam, creating a biography for a professor specializing in workplace sexual harassment, preparing a speech for the opening of a symposium, revising and updating the law school curriculum, and creating technical exams for students.

Despite some mixed information provided by the AI in teaching-related questions, performance in practical tasks was satisfactory, indicating a reduced need for human intervention to achieve good results. However, it is important to emphasize that there is still a long way to go before AI can be fully autonomous in teaching tasks, as human presence is still required for review and adjustments in certain situations.

The article titled "Role of chatGPT in Law: According to chatGPT" by Biswas (2023) from the University of Tennessee aims to analyze the use of ChatGPT by paralegals and legal assistants in terms of legal research, document generation, case management, document analysis, and client communication. According to Biswas (BISWAS, 2023), while ChatGPT is a useful tool for these professionals, there are still limitations in its expertise and understanding of certain contexts, as it is an artificial intelligence tool that is not exempt from errors. For this reason, caution should be

exercised when using the tool, as it can make mistakes and should not be considered a complete solution for all the needs of professionals in the field.

Finally, the article "Words Are Flowing Out Like Endless Rain Into A Paper Cup: ChatGPT & Law School Assessments" by Hargreaves (HARGREAVES, 2023) from the Law School of the Chinese University of Hong Kong discusses the application of ChatGPT in evaluating written assignments of law students. The research aimed to assess the accuracy and reliability of ChatGPT in evaluating written assignments and compare them with evaluations made by human professors. The results indicated that ChatGPT achieved a similar evaluative performance to human professors, suggesting that the technology can be a useful tool for assessing assignments, exams, and activities in law schools. The conclusion highlights the noteworthy degree of convergence in the results of studies conducted in different universities and countries, each with distinct legislation and personnel involved.

## 5 CONCLUSION

At this moment, it is opportune to revisit the question that guided this study - what is the state of the art in scientific literature regarding the topics of ChatGPT and the legal field? It can be said that academic discussions involving ChatGPT, and the legal field are practically nonexistent in scientific literature due to the absence of any studies published in scientific journals. We have identified only studies that are in the development phase.

Despite the incipiency of the studies conducted so far, the analysis of the work conducted up to this point demonstrates that ChatGPT, as an advanced language model, can help simplify the research process and facilitate access to relevant information for professionals in the legal field. Additionally, the technology can be used to automate routine tasks and increase the efficiency and accuracy of legal work. In the field of education, the technology can assist teachers in text correction and/or content creation under supervision. Similarly, students need to have prior knowledge to use and identify errors and/or inconsistencies generated by AI.

However, it is important to remember that technology does not replace the role of professionals and should be used as a tool to complement the quality of work/studies, as there is still room for evolution, and technology is prone to errors.

Even though methodological principles inherent to scientific studies were followed, limitations should be considered. Due to the novelty of the topic in scientific literature, the analyses were based on only four studies.

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