

Artificial Intelligence (Ai)

in

Academic Research and Scientific Publishing



21 September
University For
Medical & Applied
Sciences



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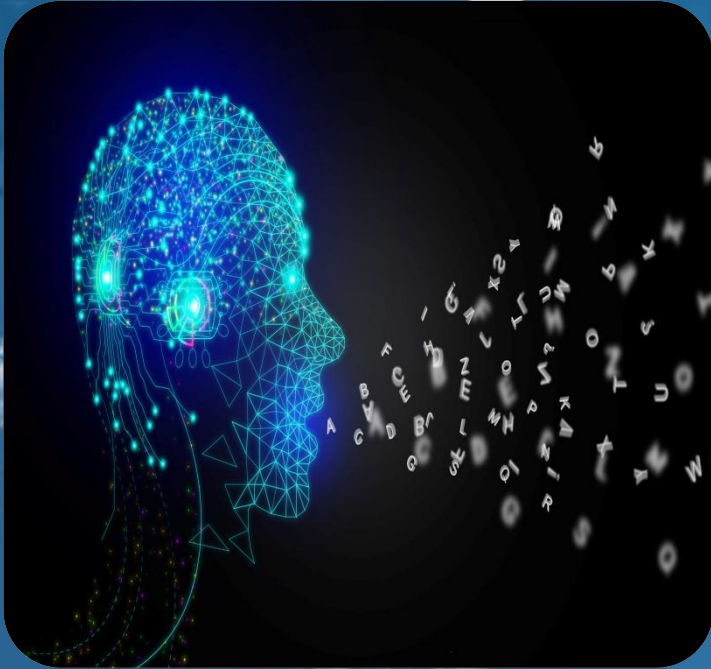
Outline

01 Introduction

02 What is an AI?

03 ChatGPT

04 Artificial Intelligence In Academic Research And Publishing



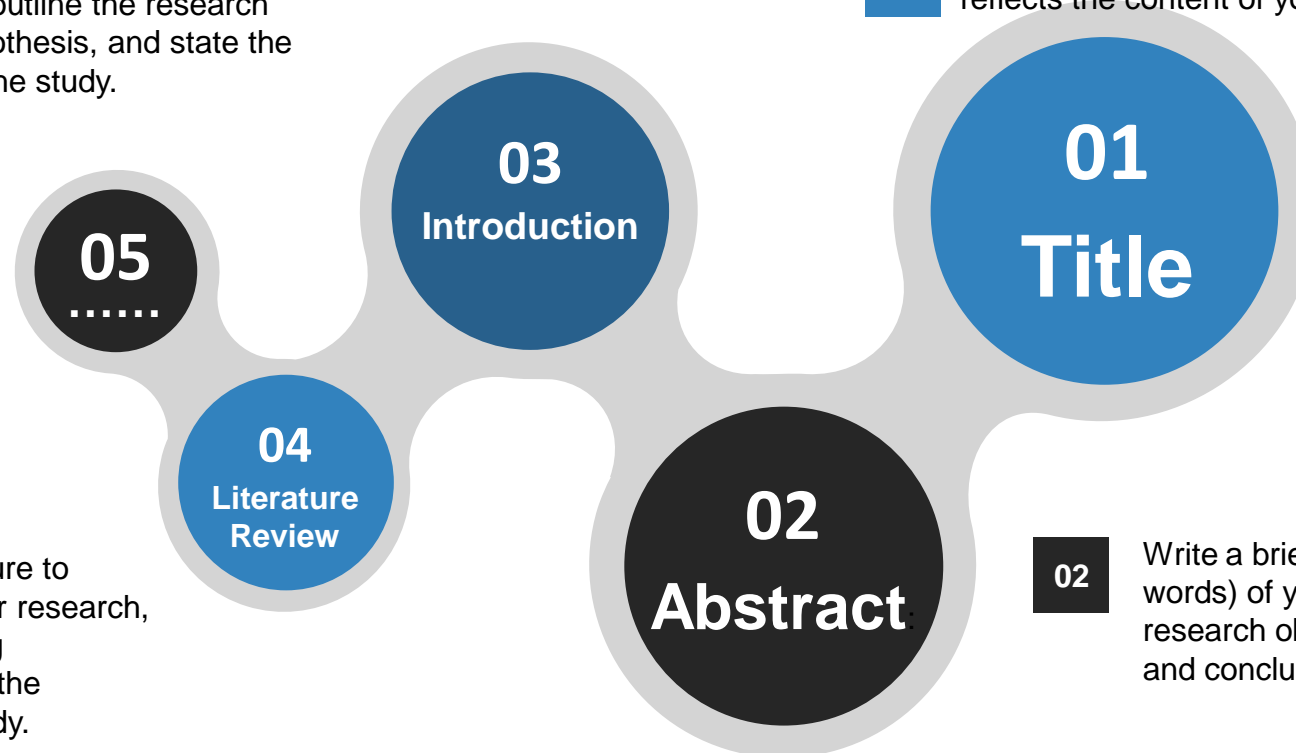
Introduction

Scientific Paper:

is a written document that presents the findings of original research or studies conducted in the fields of science. for sharing original research work with other scientists or for reviewing the research conducted by others. contains original research results or reviews existing results or shows a totally new invention

03 Provide background information on the research topic, outline the research question or hypothesis, and state the significance of the study.

01 Choose a concise and descriptive title that accurately reflects the content of your paper.

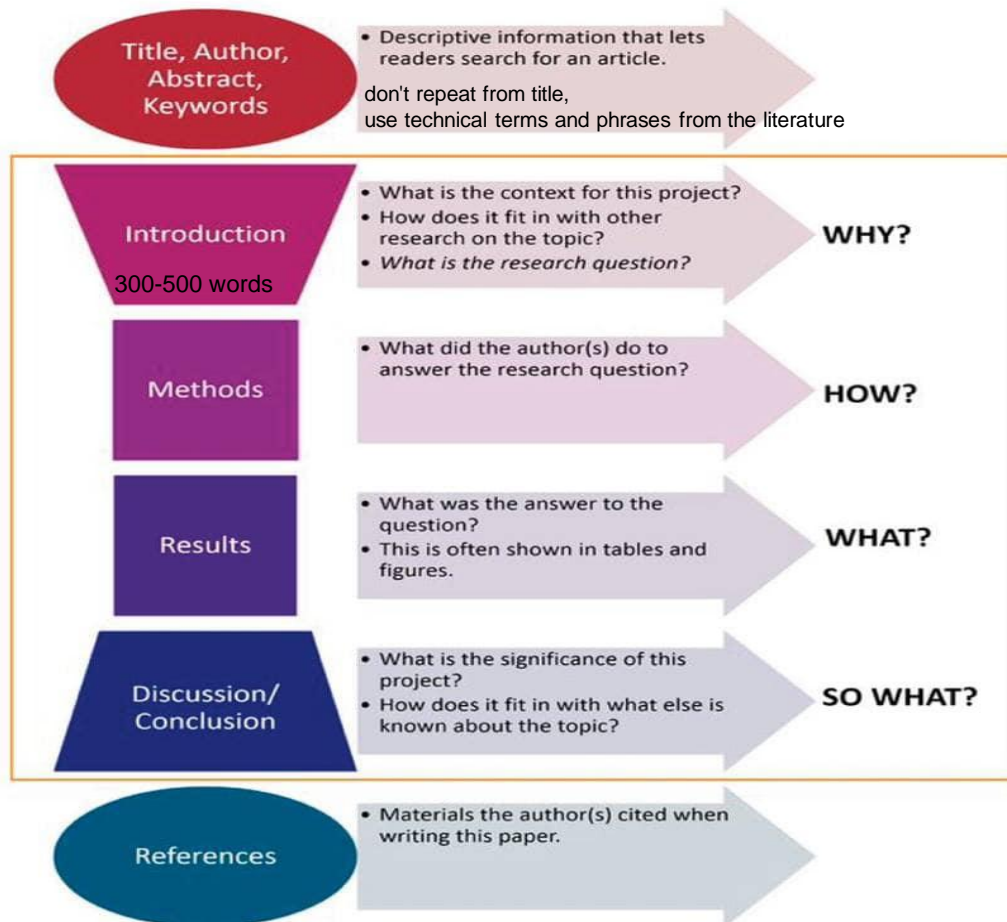


05 Continued in the next slide....

04 Review relevant literature to provide context for your research, identify gaps in existing knowledge, and justify the importance of your study.

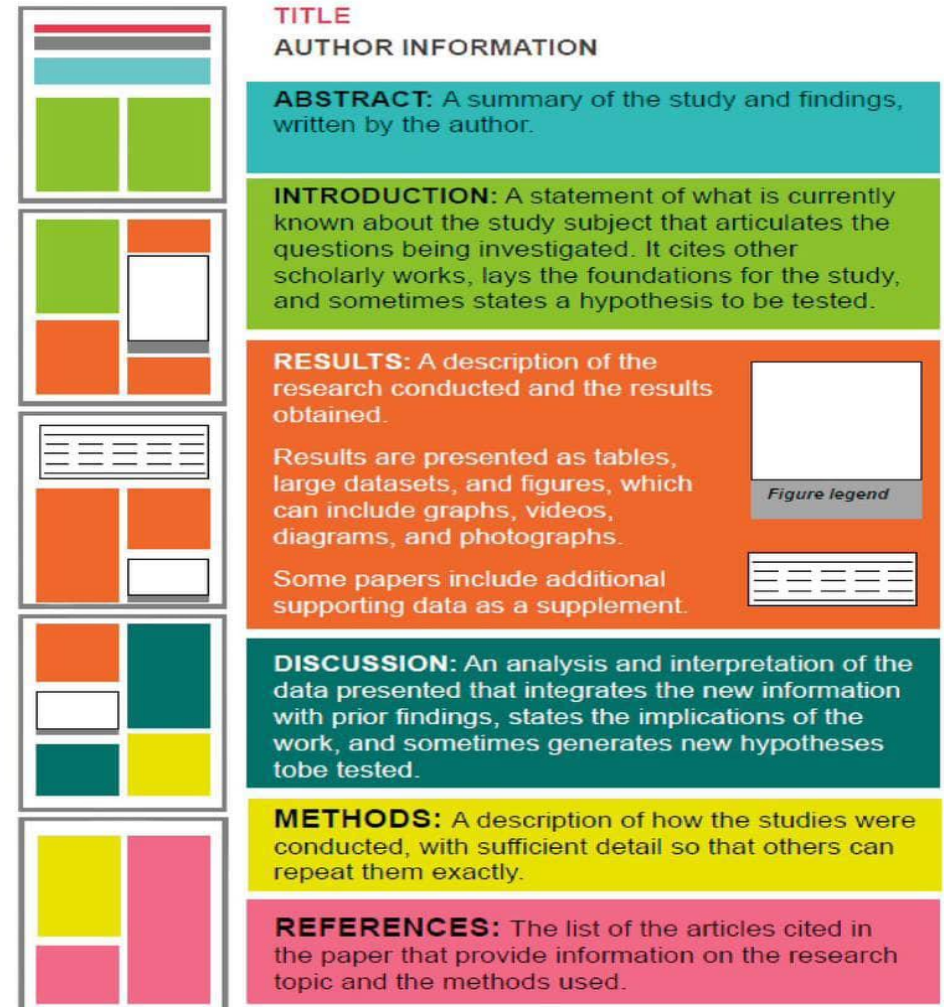
02 Write a brief summary (typically 150-250 words) of your paper, including the research objective, methods, key findings, and conclusions.

Introduction: Scientific Paper (con...)



Source: <https://iastate.pressbooks.pub/preparingtopublish/chapter/exploring-the-anatomy-of-a-research-article/>

Anatomy of a scientific paper



Source: <https://blog.aspb.org/how-to-read-a-scientific-paper-and-case-study-reading-a-plant-physiology-article/>

Introduction: Scientific Paper (con...)

Types of scientific papers

- 1 Research Articles
- 2 Review Articles
- 3 Case Studies
- 4 Short Communications
- 5 Perspectives/Opinion Papers
- 6

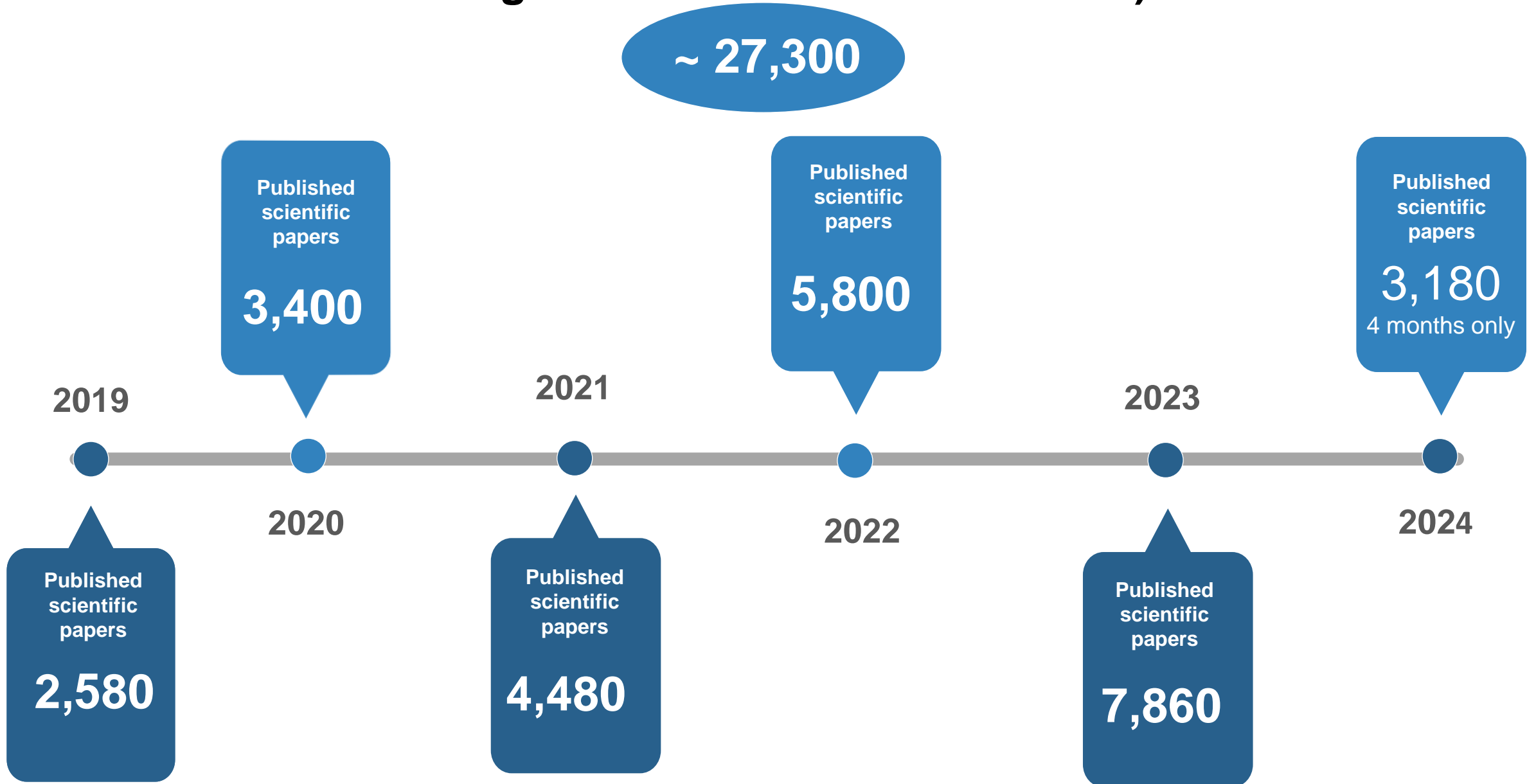


Introduction (con...)



Q1. Why do we need AI in academic research and writing?

Statistics on the number of scientific papers published in (artificial intelligence and academic research)





Any time

Since 2024

Since 2023

Since 2020

Custom range...

2019 — 2019

Search

Sort by relevance

Sort by date

Any type

Review articles

include patents

include citations

Create alert

Digital support for academic **writing**: A review of technologies and pedagogies

C Strobl, E Ailhaud, K Benetos, A Devitt, O Kruse... - Computers & ..., 2019 - Elsevier
 ... The six tools available only for particular domain users are all tools developed within **academic research** projects and made available to students or researchers within these institutions. ...

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[PDF] academia.edu

[PDF] **Artificial intelligence** (AI) applied to informative documentation and journalistic sports **writing**. The case of BeSoccer.

J Segarra-Saavedra, FJ Cristófol... - Doxa ..., 2019 - core.ac.uk
 ... The automation of documentation and news production is based on **Artificial Intelligence** (AI) and Big Data (BG). The main objective of this article is to search for theoretical references ...

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The application of **artificial intelligence** technologies as a substitute for reading and to support and enhance the authoring of scientific review articles

R Buchkremer, A Demund, S Ebener, F Gampfer... - IEEE ..., 2019 - ieexplore.ieee.org
 ... Translations and content mining are permitted for **academic research** only. Personal use is ... The systematic analysis is often biased by the development of the individual author **writing** ...

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[PDF] ieee.org

A paradigm for democratizing **artificial intelligence** research

E Moreau, C Vogel, M Barry - Innovations in Big Data Mining and ..., 2019 - Springer
 ... The relatively low level of software outcomes from NLP research weakens reproducibility, but also impacts the pace of research itself, especially **academic research**. Near-future ...

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[PDF] hal.science

A lightweight approach to **academic research** group management using online tools: spend more time on research and less on management

[PDF] aaai.org



Example: one of my papers

All

ADVANCED SEARCH

Conferences > 2023 3rd International Confer...

Scheduling in Cloud of Things: An Overview

Publisher: IEEE

Cite This

PDF

Abdulrahman Mohammed Hussein Obaid ; Awadh Ali Abdo Mohammed ; Santosh K. Pani ; Ayman Alsabry ; Hamzah Ali Qasem [All Authors](#)

32

Full

Text Views



Abstract

Document Sections

- I. Introduction
- II. Basic Concepts and Background
- III. Scheduling Types

Abstract:

Computing, Internet, digital devices, smart devices, and other technologies were leading to a new terminology known as cloud of things (CoT). Cloud of Things is a powerful technology used to analyze and store massive data from thousands of distributed devices (smartphones, vehicles, home appliances, sensors, etc.). Further, Cloud of Things integrated two concepts, Internet of Things and Cloud Computing. There are many issues in cloud computing that have been widely studied, such as scheduling. On the other hand, a few issues have been studied in Cloud of Things. The objective of this paper is to discuss and classify the scheduling issues in Cloud of Things. Researchers have developed algorithms for different environments such as heterogeneous/homogeneous clusters, cloud computing, and large-scale community grids. By reviewing and considering many

More Like This

[A survey of cloud computing taxonomies: Rationale and overview](#)

The 9th International Conference for Internet Technology and Secured Transactions (ICITST-2014)
Published: 2014

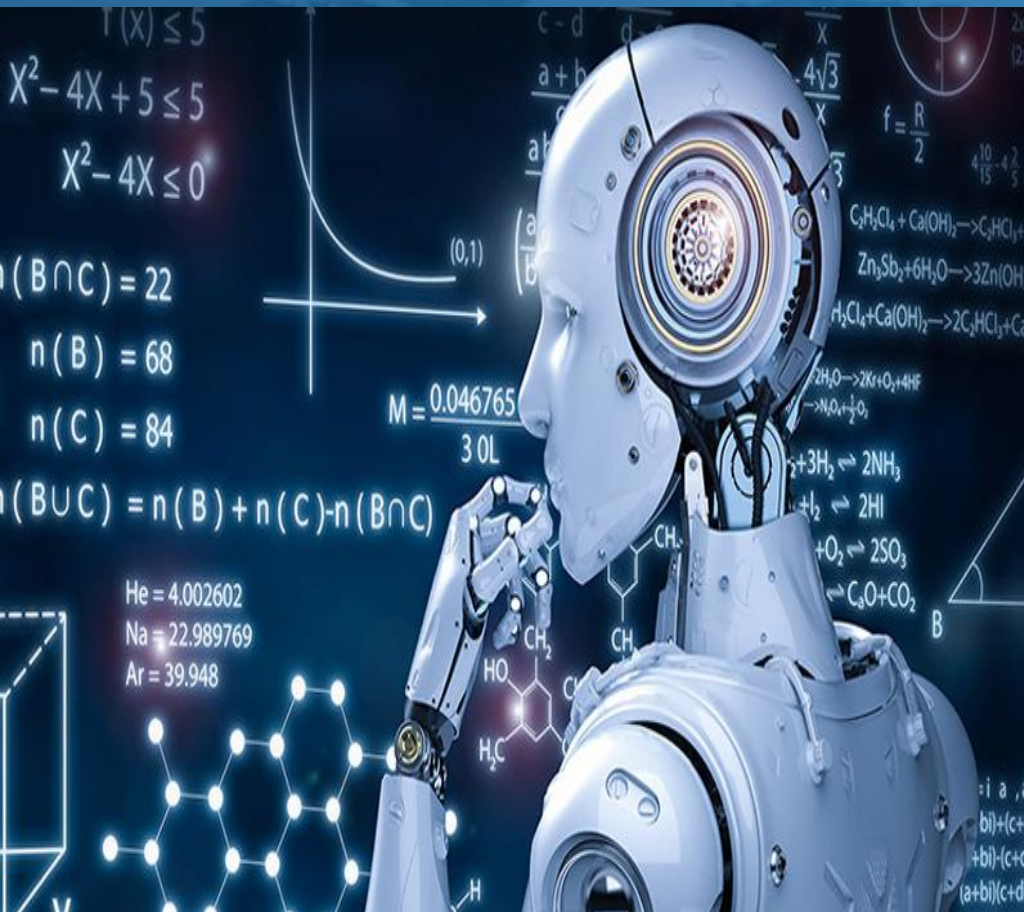
[An investigation of security risk & taxonomy of Cloud Computing environment](#)

2021 2nd International Conference on Smart Electronics and Communication (ICOSEC)
Published: 2021

Show More

Feedback

Introduction...con



Q1. Why do we need AI in academic research and writing?

What is an AI?

Artificial intelligence, its broadest sense, is intelligence exhibited by machines, particularly computer systems. [Wikipedia](#)

What is ChatGPT

ChatGPT is a language model developed by OpenAI. It is designed to generate human-like responses to text-based prompts in a conversational manner. ChatGPT has been trained on a wide range of internet text to learn patterns, language structures, and common knowledge. It can be used for applications like chatbots, virtual assistants, and interactive conversational agents. While ChatGPT can generate impressive responses, it has limitations and ethical considerations, and responsible usage is encouraged.



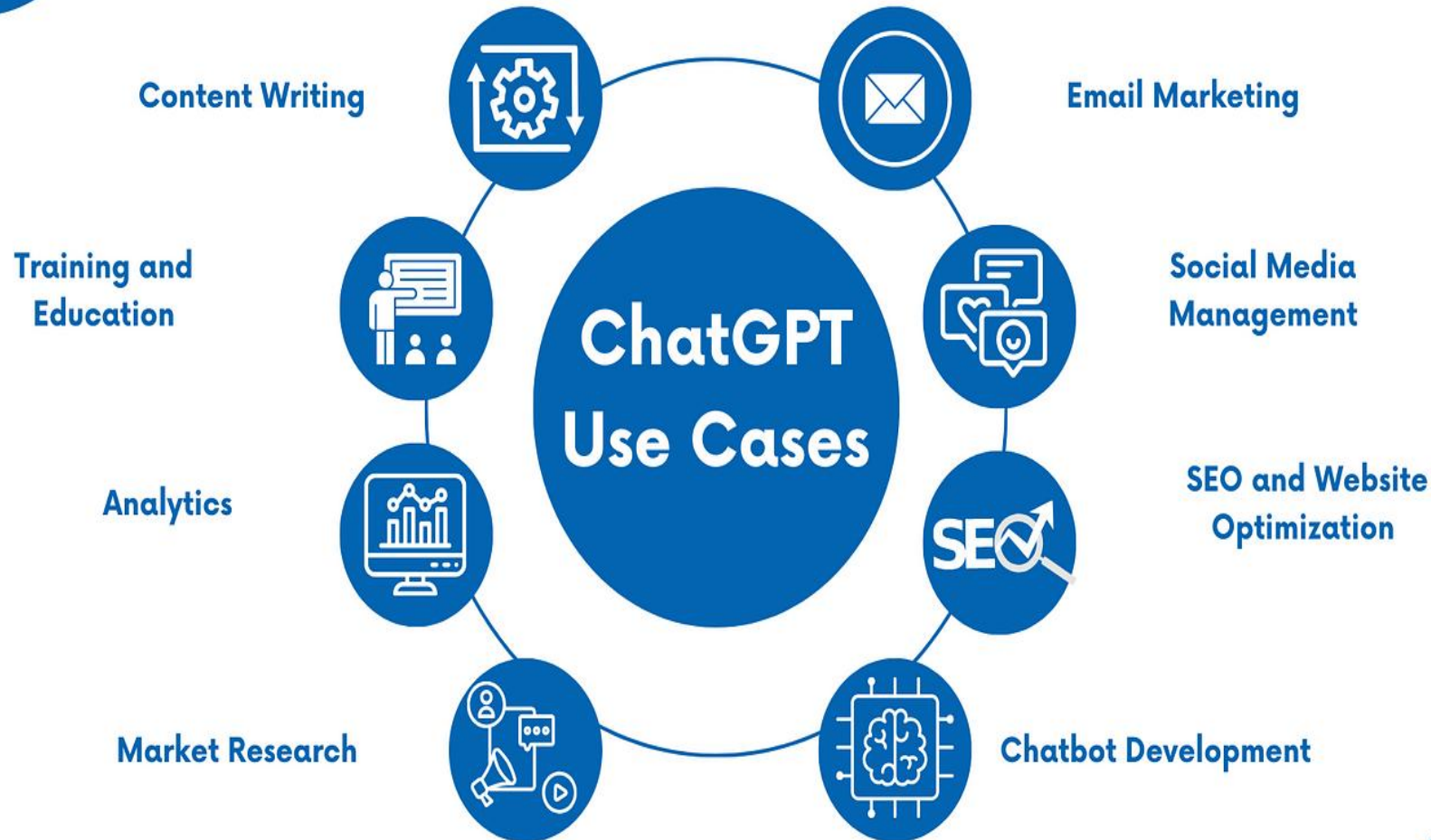
GPT-3,
released in
June 2020
free



GPT-4, released
in March 14,
2023
\$20.00/ 1M

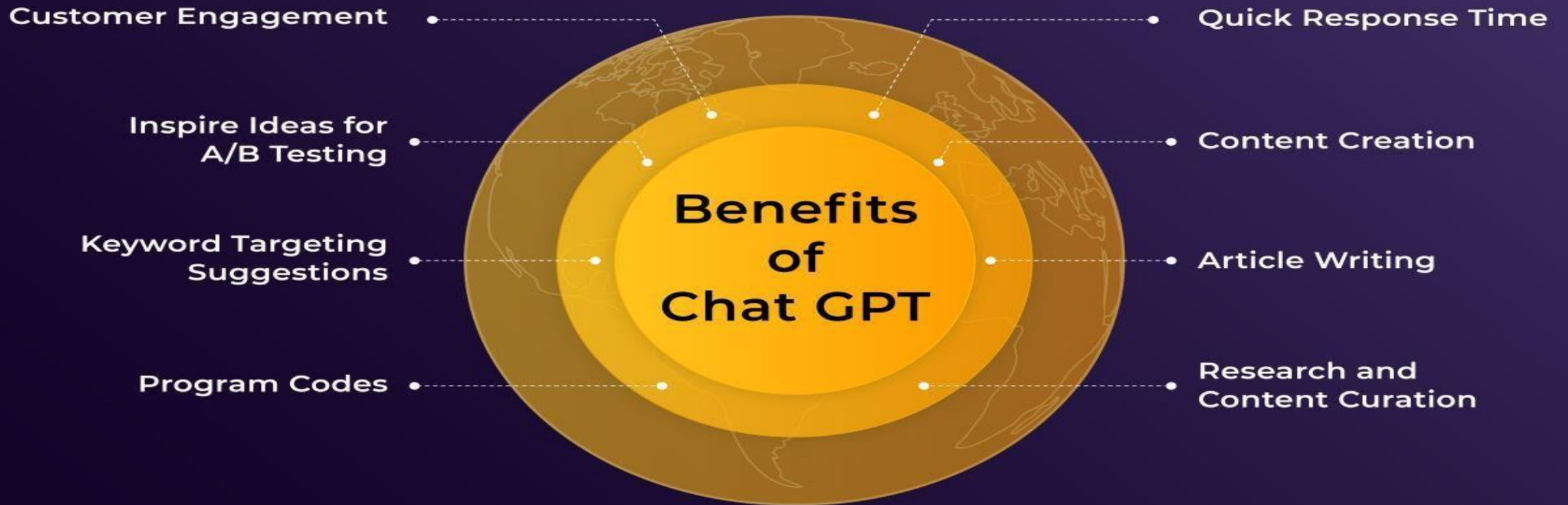


Uses of ChatGPT?



What are the benefits of ChatGPT?

Benefits of Chat GPT



What are the restrictions of using ChatGPT?

Restrictions of Using ChatGPT

- 1 Misinformation and Harmful Content
- 2 Inappropriate Content.
- 3 Political Bias
- 4 Limitations on Legal and Professional Advice
- 5 Knowledge and Context



What are The Ethical Concerns Associated with Chatgpt?

1

Plagiarism and deceptive use.

2

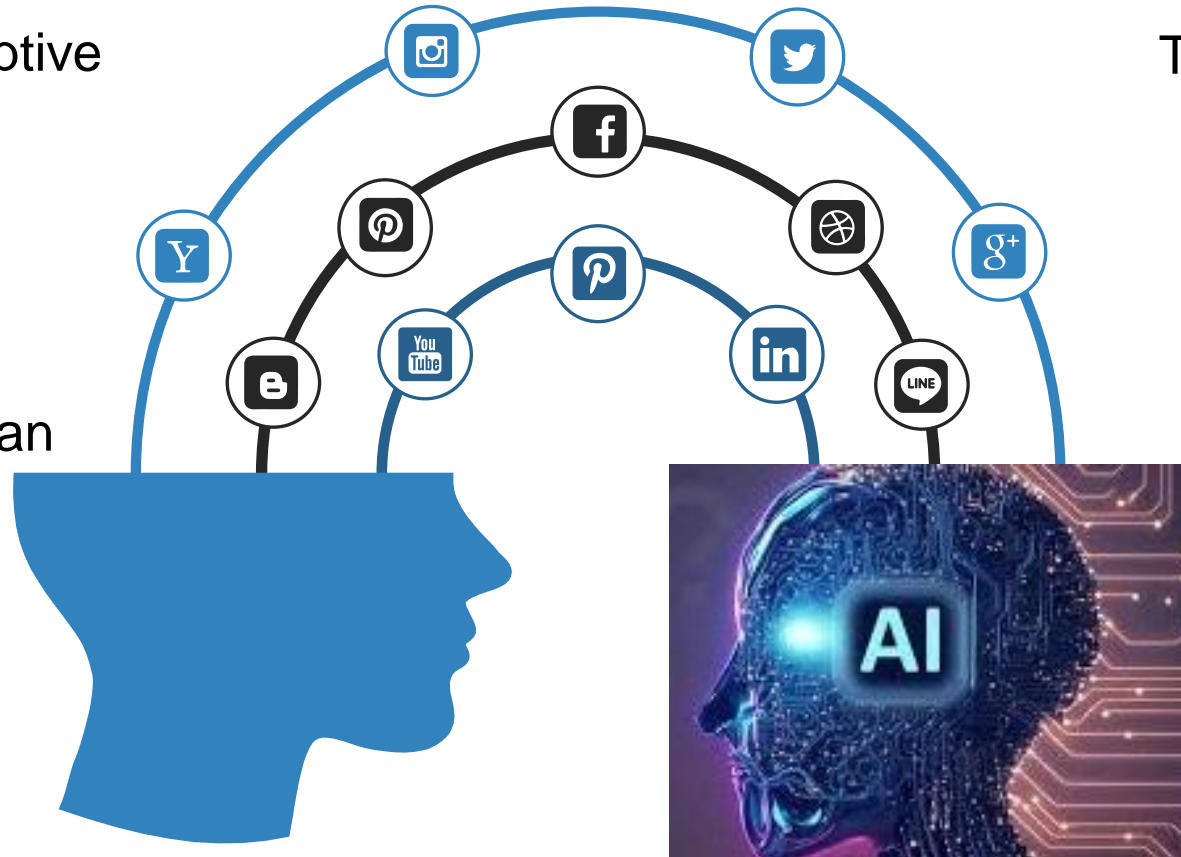
Training data bias

3

Job replacement and human interaction

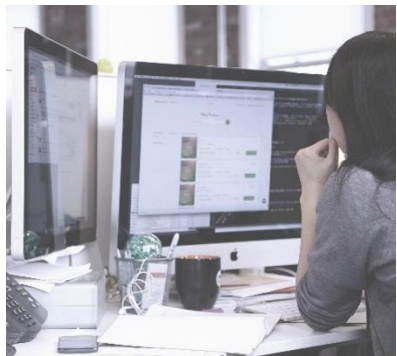
4

Privacy issues

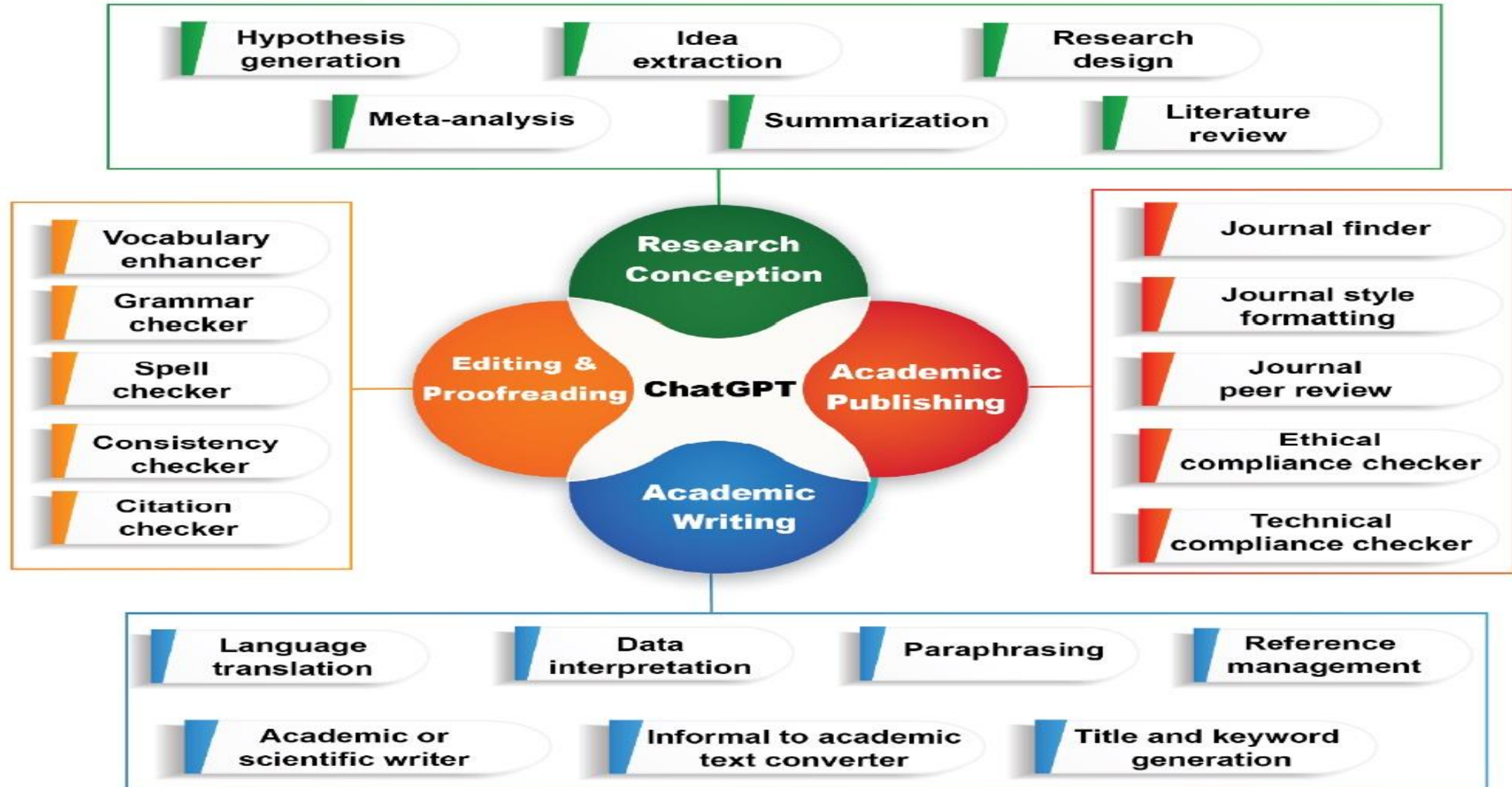


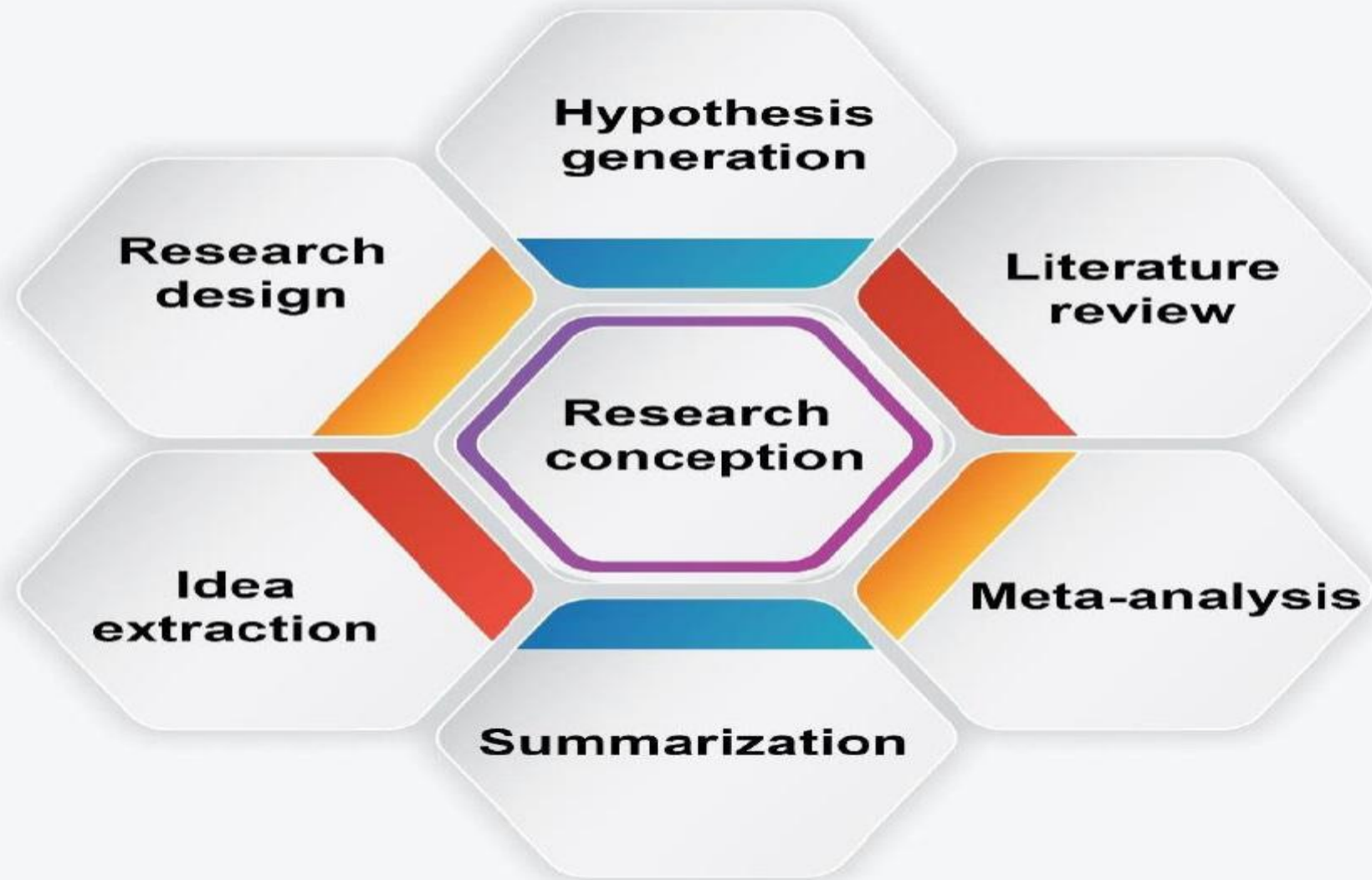
How to access ChatGPT's website

<https://chat.openai.com/>



artificial intelligence in academic research and publishing





ChatGPT in research conception

literature review

Prompt

Conduct a literature review for using nanomaterials in architecture.



Response

Introduction:

Nanomaterials are a class of materials that have unique properties because of their size, with dimensions typically between 1 and 100 nanometers. These materials have been used in many fields, including medicine, electronics, and energy. Recently, nanomaterials have also been explored in architecture to improve the performance and sustainability of buildings. This literature review aims to provide an overview of the current state of research on using nanomaterials in architecture.

Nanomaterials in Architecture:

Nanomaterials have the potential to enhance the performance of building materials, such as concrete, glass, and coatings, by improving their mechanical, thermal, and optical properties. For instance, adding nanoparticles to concrete can increase its strength and durability, while using [nanocoatings](#) on glass can improve its insulation and self-cleaning abilities.

One promising application of nanomaterials in architecture is in the development of smart buildings. By integrating [nanosensors](#) and nanoelectronics into building materials, it is possible to create structures that can monitor their own performance, adjust to changing environmental conditions, and respond to occupant needs. For example, [nanosensors](#) embedded in concrete can detect structural damage and alert maintenance crews before it becomes a safety issue.

Nanomaterials also offer opportunities for sustainable building design. By improving the efficiency of building materials, it is possible to reduce the energy consumption of buildings and lower their carbon footprint. For example, using [nanocoatings](#) on windows can reduce the need for artificial lighting and heating by allowing more natural light and warmth into the building.

Summarization

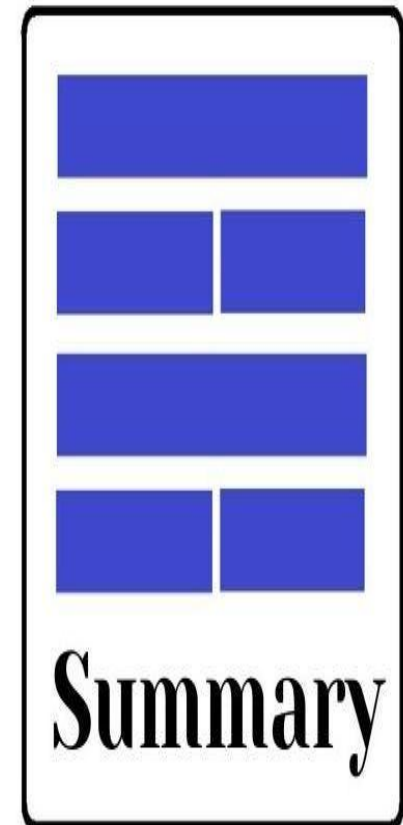
Prompt

Summarize the following paragraph in 100 words:

3D printing or Additive Manufacturing is the process of joining engineering materials layer-by-layer to fabricate the desired component from a 3-dimensional model data in the early 80s. According to the basic principle of manufacturing it is classified into seven categories namely, binder jetting, material extrusion, directed energy deposition, material jetting, powder bed fusion, sheet lamination and vat photo-polymerization. These different techniques can process a wide range of materials ranging from metals, polymers, ceramics, composites and hybrids. After three decades of development in the field of 3D printing, it is now one of the mainstream manufacturing processes which do not require any fixture, lubricant, coolant or any other auxiliary resource. Its ability to produce customized parts on-demand has led to the gain of its popularity in the recent decade. 3D printing has evolved as a powerful technique for rapid prototyping, mass manufacturing and producing customized parts. This review paper provides a basic overview of the different techniques, materials processed and its application in different fields. There is a need for further research in this area of additive manufacturing so that its limitation can be overcome and the true potential of this manufacturing technique can be achieved.

Response

3D printing or Additive Manufacturing is a popular technique for joining engineering materials layer-by-layer to fabricate components. It has seven categories of manufacturing, including binder jetting, material extrusion, directed energy deposition, material jetting, powder bed fusion, sheet lamination, and vat photo-polymerization. This technique can process a wide range of materials, including metals, polymers, ceramics, composites, and hybrids. 3D printing has become a mainstream manufacturing process, which produces customized parts on-demand without any additional resources. It is used for rapid prototyping, mass manufacturing, and producing customized parts. Further research is needed to overcome limitations, and the true potential of this technique can be achieved.



Idea Extraction

Prompt

What are the idea and innovation in "Green synthesis of olefin-linked covalent organic frameworks for hydrogen fuel cell applications"?

Response

The idea behind "Green synthesis of olefin-linked covalent organic frameworks for hydrogen fuel cell applications" is to develop a sustainable method for creating covalent organic frameworks (COFs) that can be used in hydrogen fuel cells. The traditional methods for synthesizing COFs often involve toxic solvents and high temperatures, which are not environmentally friendly. Therefore, the authors propose a green synthesis approach that uses an eco-friendly solvent and mild reaction conditions.



Research design

Prompt

Create a research design based on the following research question; How do the US and the UK compare in health outcomes among low-income people with chronic illnesses?



Research Design

Response

Research Question: How do the US and the UK compare in health outcomes among low-income people with chronic illnesses?

Research Design:

- 1 . Research Approach: Comparative Study
- 2 . Sample: Low-income people with chronic illnesses from the US and the UK
- 3 . Sampling Technique: Stratified Random Sampling
- 4 . Sample Size: 800 participants (400 from the US and 400 from the UK)
- 5 . Data Collection Method: Survey questionnaire and medical records review
- 6 . Data Analysis: Descriptive and inferential statistics
- 7 . Variables:

Independent variables:

- Country (US vs UK)

Dependent variables:

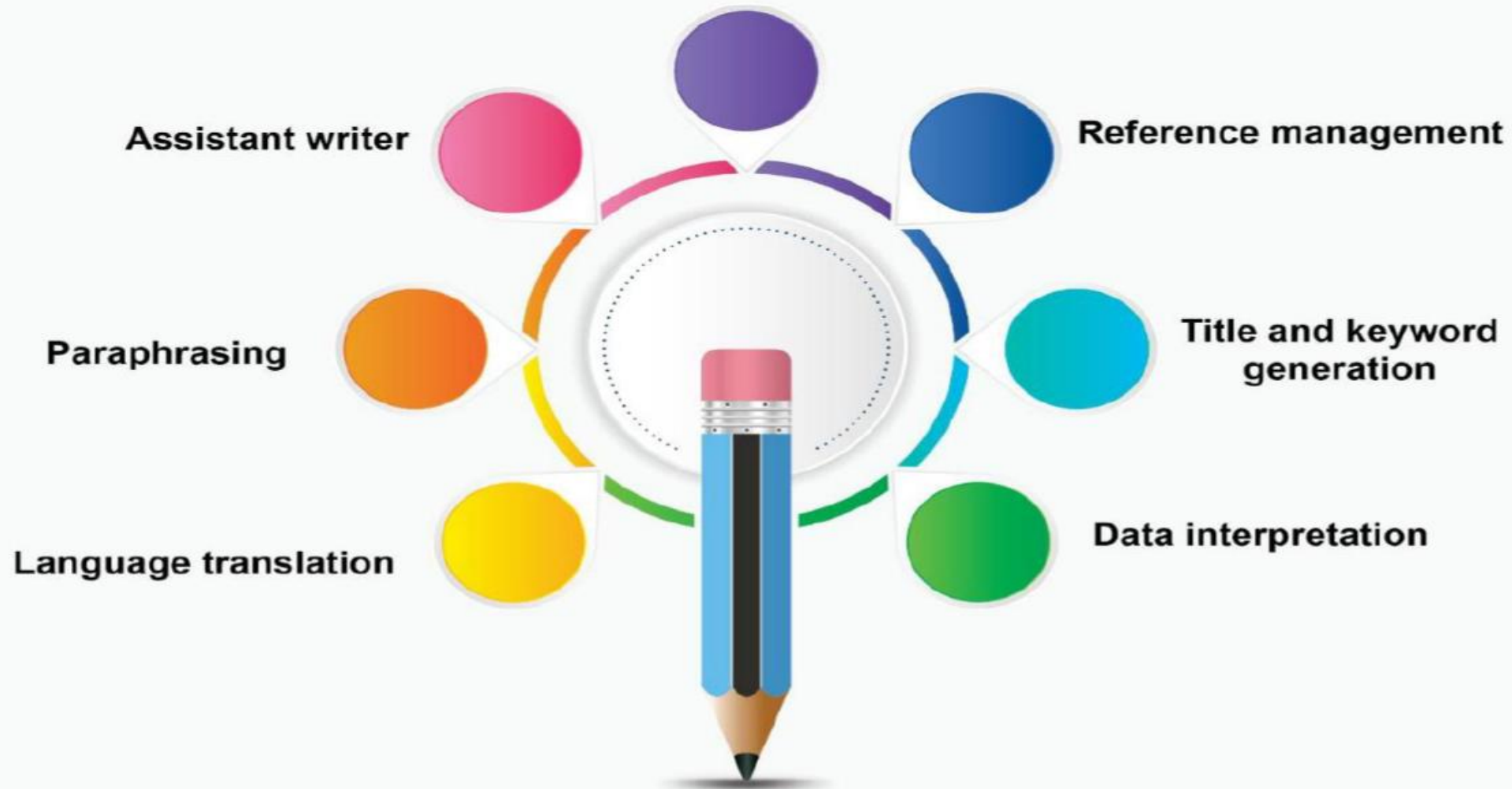
- Health outcomes (mortality rate, morbidity rate, quality of life, and healthcare utilization)
- Chronic illness type (diabetes, hypertension, heart disease, kidney disease, lung disease, and cancer)
- Socioeconomic status (income, education, employment status, and insurance coverage)

8 . Procedure:

- Obtain ethical approval for the study
- Develop a survey questionnaire that includes questions related to health outcomes, chronic illness type, socioeconomic status, and healthcare utilization
- Identify low-income people with chronic illnesses from the US and the UK using stratified random sampling
- Contact potential participants and obtain informed consent
- Conduct the survey questionnaire either via phone, email or in-person depending on the participant's preference
- Collect medical records on participants' chronic illness diagnosis and treatment history
- Analyze the data using appropriate statistical methods
- Compare the health outcomes between the US and the UK using inferential statistics
- Draw conclusions and make recommendations based on the results of the study

Academic and Scientific Writing

Informal to academic text converter



ChatGPT in academic and scientific writing

Academic and scientific writing

Prompt

Write an introduction for a research article on using 3D printing for the rapid prototyping of structural electronics.

Response

The field of structural electronics has gained significant attention in recent years due to its potential for creating smart structures with integrated electronic functionalities. Structural electronics involves the integration of electronic components, such as sensors, actuators, and energy storage devices, into the structural materials of the system. Traditional manufacturing methods for structural electronics involve complex and time-consuming processes, which can hinder the rapid prototyping and development of new devices. 3D printing, however, offers a promising approach for the rapid prototyping of structural electronics by enabling the fabrication of complex and customized structures with integrated electronic functionalities. This research article aims to provide an overview of the current state-of-the-art in 3D printing for the rapid prototyping of structural electronics, including the materials, techniques, and applications. The article also discusses the challenges and future directions for the use of 3D printing in the field of structural electronics.



Converting informal text into academic text

Prompt

Transform into academic text:

Watching my brother transform from a man who had lost his ability to walk to a man who can play basketball with my father kindled my fascination of the physical therapy world. The Bureau of Labor Statistics anticipates the field of physical therapy to grow faster than average in the upcoming years. I hope to join this field during an exciting time of growth, furthering the rehabilitation of those who have been injured.

I expect to gain skills and experiences from ABC Business School that will propel my short and long-term goals. I hope to develop an experiential and diverse learning experience and have the opportunity to interact with different groups of people to learn from their business insights and endeavours. From ABC Business School, I seek the tools and resources needed to further engage in my marketing knowledge, perform professional strategic

Response

When my brother's car accident in 2011 caused immobility in his left leg, he never thought he would be able to play his favorite sport again. David Andrews, a 1994 graduate from ABC Business School, ensured that that would not come to pass. I spoke with Andrews about his journey, and he told me that it was through the opportunities and education he received from the professors and students at ABC Business School that helped him open his own practice. I hope to follow in Andrews's footsteps. With the passion I have for the success of Ridgeview Physical Therapy, and the determination I learned from watching my brother, all I need to complete my goals is the knowledge available to me through an MBA at ABC Business School. I look forward to completing my career aspirations using the tools received from ABC Business School to contribute to my professional career.

The world of physical therapy is growing, and with my skills in marketing, I hope to grow the local Ridgeview services across the globe.

Paraphrasing

Prompt

Paraphrase the following paragraph:

Climate change is one of the most severe threats to global lake ecosystems. Lake surface conditions, such as ice cover, surface temperature, evaporation and water level, respond dramatically to this threat, as observed in recent decades. In this Review, we discuss physical lake variables and their responses to climate change. Decreases in winter ice cover and increases in lake surface temperature modify lake mixing regimes and accelerate lake evaporation. Where not balanced by increased mean precipitation or inflow, higher evaporation rates will favour a decrease in lake level and surface water extent. Together with increases in extreme-precipitation events, these lake responses will impact lake ecosystems, changing water quantity and quality, food provisioning, recreational opportunities and transportation. Future research opportunities, including enhanced observation of lake variables from space (particularly for small water bodies), improved in situ lake monitoring and the development of advanced modelling techniques to predict lake processes, will improve our global understanding of lake responses to a changing climate [25].

Response

The impact of climate change on global lake ecosystems is a significant threat, affecting various surface conditions such as ice cover, surface temperature, evaporation, and water level, which have been observed to change dramatically in recent decades. This review article discusses the physical variables of lakes and their responses to climate change. The reduction in winter ice cover and increase in lake surface temperature affects lake mixing regimes and accelerates evaporation rates. Unless balanced by increased precipitation or inflow, this will result in a decrease in lake level and surface water extent. These responses of lakes to climate change, coupled with extreme-precipitation events, will have consequences for lake ecosystems and impact water quantity and quality, food provision, recreational activities, and transportation. Future research opportunities include improved observation of lake variables from space, enhanced in situ lake monitoring, and advanced modeling techniques to predict lake processes, which will improve our understanding of global lake responses to climate change.

Interpretation and visualization of scientific data

Prompt

Extract data about number of deaths by COVID 19 each European country and put it in a table.

Response

Here is a table showing the number of deaths by COVID-19 in each European country as of April 4th, 2023, based on data collected by Our World in Data:

Country	Total Deaths
Albania	2,377
Andorra	186
Austria	19,232
Belarus	23,824
Belgium	50,283
Bosnia and Herzegovina	11,402
Bulgaria	17,503
Croatia	10,532
Cyprus	1,001

Czech Republic	37,987
Denmark	3,090
Estonia	1,843
Finland	1,778
France	148,946
Germany	103,881
Greece	13,767
Hungary	17,348
Iceland	49
Ireland	6,732
Italy	147,745
Kosovo	2,465
Latvia	1,129
Liechtenstein	24
Lithuania	3,317
Luxembourg	1,415
Malta	342
Moldova	11,236
Luxembourg	1,415
Malta	342
Moldova	11,236
Monaco	38
Montenegro	1,643
Netherlands	22,066
North Macedonia	4,780
Norway	1,082

Create the Title and Keywords

Prompt

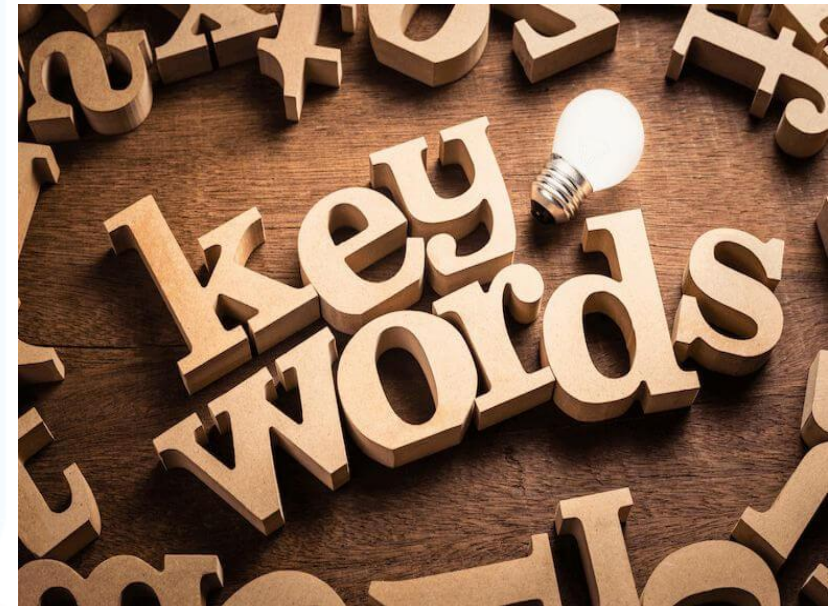
Generate the title and keywords for the following abstract:

New and improved agricultural technologies can transform lives, particularly the lives of smallholder farm households in Asia who are highly dependent on agriculture. However, there are large gender disparities in the adoption of such technologies. Many barriers exist in achieving gender equity in access to and adoption of agricultural technologies, from sociocultural norms and deeply rooted beliefs about gender roles to lack of agency and lack of resources to implement policies. Notwithstanding these barriers, the case for promoting gender-inclusive adoption of technology is strong. In this paper, we outline the rationale for improving women's adoption of agricultural technology and discuss the pitfalls of failing to include women in the technology-adoption agenda. We then explore the policy implications and suggest various strategies that promote gender-equitable outcomes and that can be used to mainstream gender in agricultural technology adoption efforts to convert policy statements to practical and effective actions [26].

Response

Title: Addressing Gender Disparities in Agricultural Technology Adoption in Asia: Policy Implications and Strategies

Keywords: agricultural technology, gender disparities, smallholder farmers, Asia, sociocultural norms, gender roles, agency, resources, policy implications, gender-equitable outcomes, mainstreaming gender, practical strategies, effective actions.



References management

Prompt

Suggest 10 references about applications of artificial intelligence in drug discovery.

Response

Here are 10 references related to the applications of artificial intelligence in drug discovery:

- 1 [Ching T](#), [Himmelstein DS](#), [Beaulieu-Jones BK](#), et al. Opportunities and obstacles for deep learning in biology and medicine. *J R Soc Interface*. 2018;15(141):20170387. doi:10.1098/rsif.2017.0387
- 2 [Goh GB](#), [Hodas NO](#), [Vishnu A](#). Deep learning for computational chemistry. *J Comput Chem*. 2017;38(16):1291-1307. doi:10.1002/jcc.24764
- 3 [Gupta A](#). Artificial intelligence in drug discovery: present status and future prospects. *Expert Opin Drug Discov*. 2020;15(3):229-238. doi:10.1080/17460441.2020.1718405
- 4 [Hessler G](#), [Zimmermann M](#), [Matter H](#), [Gubler HU](#). Automated ligand design: a new tool

for drug discovery. *Drug Discov Today*. 2007;12(9-10):389-394. doi:10.1016/j.drudis.2007.03.012

5 [Imrie F](#), [Bradley AR](#), [van der Meer AD](#), et al. Artificial intelligence in drug discovery: recent advances and future prospects. *Expert Opin Drug Discov*. 2020;15(12):1421-1432. doi:10.1080/17460441.2020.1831971

6 [Kearnes S](#), [McCloskey K](#), [Berndl M](#), et al. Molecular graph convolutions: moving beyond fingerprints. *J Comput Aided Mol Des*. 2016;30(8):595-608. doi:10.1007/s10822-016-9938-8

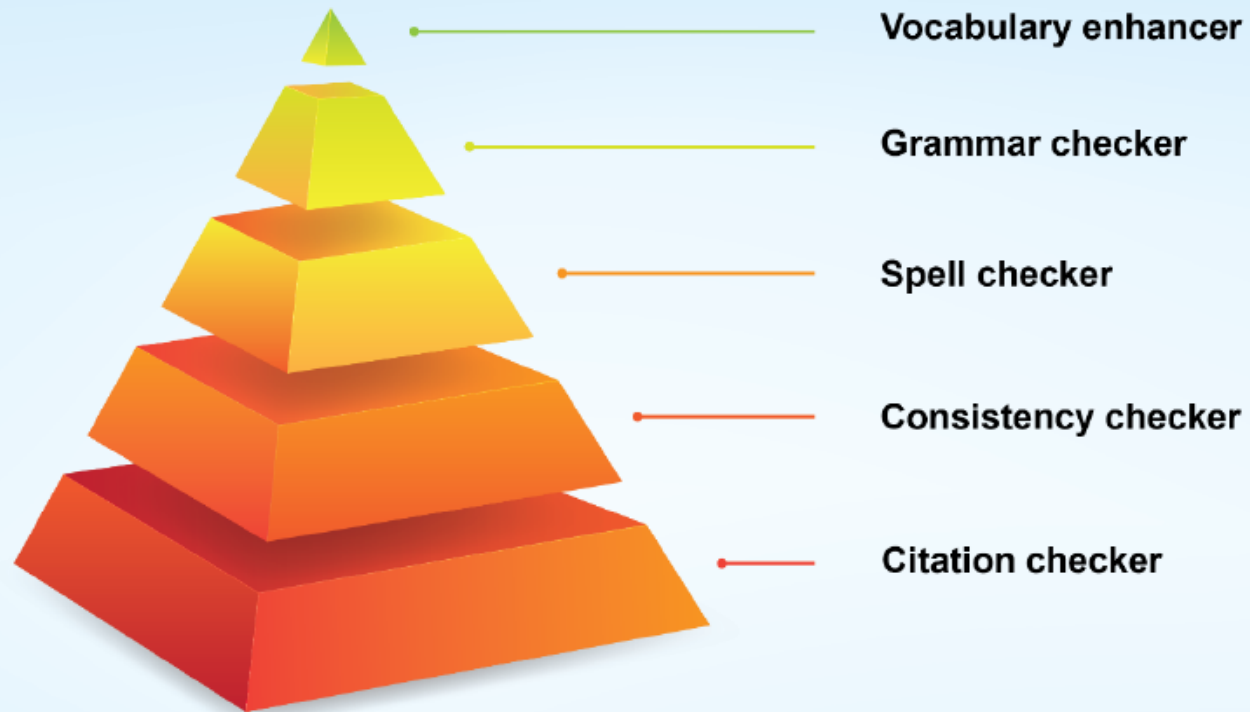
7 [Keiser MJ](#), [Roth BL](#), [Armbruster BN](#), et al. Relating protein pharmacology by ligand chemistry. *Nat Biotechnol*. 2007;25(2):197-206. doi:10.1038/nbt1284

8 [Kipf TN](#), [Welling M](#). Semi-supervised classification with graph convolutional networks. *arXiv*. 2016. arXiv:1609.02907

9 [LeCun Y](#), [Bengio Y](#), [Hinton G](#). Deep learning. *Nature*. 2015;521(7553):436-444. doi:10.1038/nature14539

10. [Wallach I](#), [Dzamba M](#), [Heifets A](#). [AtomNet](#): a deep convolutional neural network for bioactivity prediction in structure-based drug discovery. *arXiv*. 2015. arXiv:1510.02855

ChatGPT Application for Editing and proofreading



ChatGPT in editing and proofreading

Editing and proofreading

Prompt

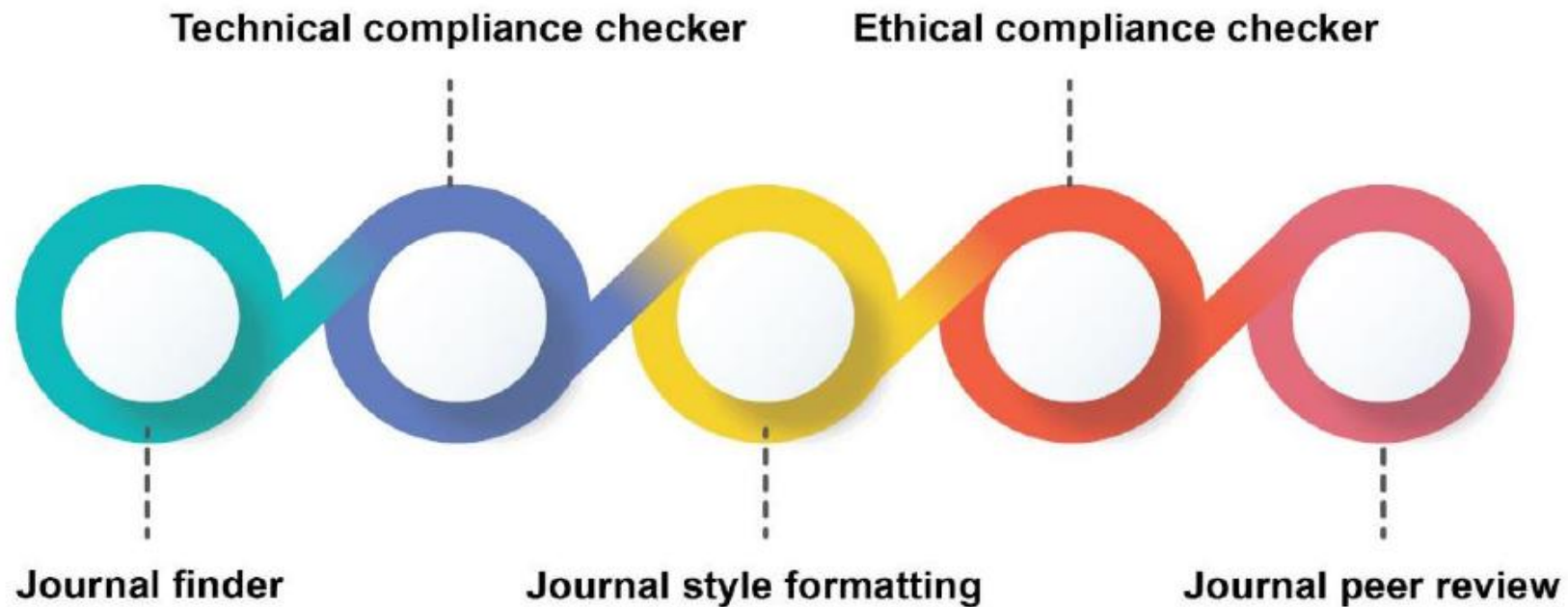
Edite and proofread the following:

The Economic crisis is usually see as the situation into which the economy of a country experiences the sudden downturn in aggregate output or reality gross domestic product (GDP). The results of the economic crisis is a decline in real income per capital and an increaseing in unemployment and poverty.

Response

The economic crisis is usually seen as a situation in which the economy of a country experiences a sudden downturn in aggregate output or real gross domestic product (GDP). The result of an economic crisis is a decline in real income per capita and an increase in unemployment and poverty.

Academic publishing



ChatGPT in academic and scientific publishing

Journal Finder

Prompt

Give a list of journals for this abstract and recommend the best one:

Breast cancer is a significant health concern worldwide, and there is a constant need for the development of new and effective treatments. Organic compounds have received considerable attention as potential sources of anti-cancer agents due to their diverse chemical structures and biological activities. In this paper, we focus on the synthesis of derivatives from organic compounds for breast cancer treatment. We review various synthetic strategies and methods for the preparation of organic derivatives with potential anti-cancer activity against breast cancer. These include modifications to the structure of natural compounds, as well as the development of new synthetic compounds with optimized pharmacological properties. We also discuss the mechanisms of action of these compounds and their potential for clinical application. Finally, we highlight the challenges and future directions for the development of organic derivatives as anti-cancer agents for breast cancer. This review provides valuable insights into the synthesis and development of organic derivatives for breast cancer treatment, which could contribute to the development of novel and effective anti-cancer therapies.

Response

List of journals for this abstract:

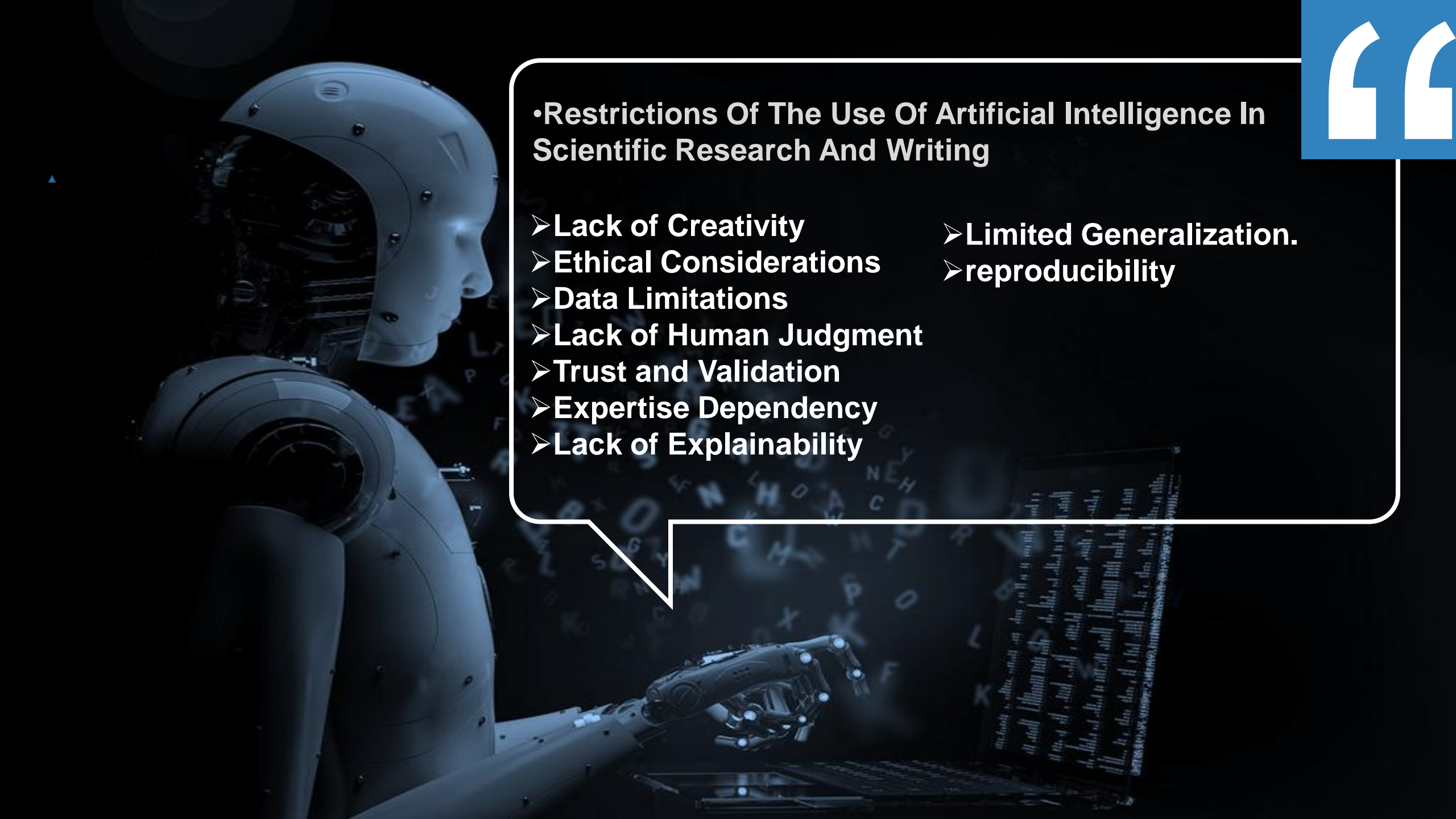
- Journal of Medicinal Chemistry
- Cancer Research
- European Journal of Medicinal Chemistry
- Anti-Cancer Agents in Medicinal Chemistry
- Bioorganic & Medicinal Chemistry Letters
- Breast Cancer Research and Treatment

The best journal for this abstract would be "Breast Cancer Research and Treatment" as it is a highly respected and specialized journal in the field of breast cancer research and treatment.



•Restrictions Of The Use Of Artificial Intelligence In Scientific Research And Writing

- Lack of Creativity
- Ethical Considerations
- Data Limitations
- Lack of Human Judgment
- Trust and Validation
- Expertise Dependency
- Lack of Explainability
- Limited Generalization.
- reproducibility



References



- 1 https://www.researchgate.net/publication/377951475_ktab_aldhka_alastnay_wastkhdamath_fy_albht_h_walnshr_alakadymy_kyfyt_astkhdam_ChatGPT_fy_albhth_walnshr_walakadymy
- 2 <https://chatgpt.com/>
- 3 Zohery, Medhat. (2023). Chapter 2: ChatGPT in Academic Writing and Publishing: A Comprehensive Guide. 10.5281/zenodo.7803703
- 4 What is generative AI? Everything you need to know ,<https://www.techtarget.com/whatis/definition/ChatGPT>
- 5 Sa Ivagno, M., Taccone, F.S. & Gerli, A.G. Can artificial intelligence help for scientific writing?. Crit Care 27, 75 (2023). https://doi.org/10.1186/s13054_023_04380_2

The End

Thank You

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PRESENTATION, READ THE
FOLLOWING QR:

