  
  
(crew\_env) C:\Users\USER\Downloads\Test\_Agent\Test\_5>python run\_redel.py

✅ AutoAgentSystem 啟動！直接輸入你的總任務，Ctrl+C / exit 可退出。

USER: 請撰寫一篇報告，分析 AI 在醫療、金融、教育三產業的應用，每產業包含 技術應用、倫理挑戰與未來發展。

AI:撰寫這篇報告需要詳細分析 AI 在醫療、金融和教育三個產業的應用情況。每個產業都需要涵蓋以下幾個方面：

1. \*\*技術應用\*\*：描述目前 AI 技術在該產業中的具體應用場景和技術細節。

2. \*\*倫理挑戰\*\*：討論 AI 應用可能引發的倫理問題和挑戰。

3. \*\*未來發展\*\*：預測 AI 在該產業的未來發展方向和潛力。

為了有效地處理這個複雜的任務，我將把它分解成三個子任務，分別針對醫療、金融和教育產業。每個子任務將進一步分解為三個部分。然後，我將委派這些子任務給專門的子代理來完成。以下是計劃：

### 子任務 1：AI 在醫療產業的應用

- 技術應用

- 倫理挑戰

- 未來發展

### 子任務 2：AI 在金融產業的應用

- 技術應用

- 倫理挑戰

- 未來發展

### 子任務 3：AI 在教育產業的應用

- 技術應用

- 倫理挑戰

- 未來發展

我將立即委派這些子任務給不同的專家代理。

[🛠️ Tool Call]: [ToolCall(id='call\_3qCz7z2r3BA2Jox00rdfaNd7', type='function', function=FunctionCall(name='delegate', arguments='{"instructions": "Analyze the application of AI in the healthcare industry. Focus on the following aspects:\\n1. Technical Applications: Describe current AI technologies and their specific applications in healthcare.\\n2. Ethical Challenges: Discuss potential ethical issues and challenges posed by AI applications in healthcare.\\n3. Future Developments: Predict future trends and potential developments of AI in healthcare."}')),

ToolCall(id='call\_QqnbvtHF5yF8olYh45zrva6Y', type='function', function=FunctionCall(name='delegate', arguments='{"instructions": "Analyze the application of AI in the financial industry. Focus on the following aspects:\\n1. Technical Applications: Describe current AI technologies and their specific applications in finance.\\n2. Ethical Challenges: Discuss potential ethical issues and challenges posed by AI applications in finance.\\n3. Future Developments: Predict future trends and potential developments of AI in finance."}')),

ToolCall(id='call\_qPRclj0FU7khPUNbhGVyZ7cf', type='function', function=FunctionCall(name='delegate', arguments='{"instructions": "Analyze the application of AI in the education industry. Focus on the following aspects:\\n1. Technical Applications: Describe current AI technologies and their specific applications in education.\\n2. Ethical Challenges: Discuss potential ethical issues and challenges posed by AI applications in education.\\n3. Future Developments: Predict future trends and potential developments of AI in education."}'))]

[✅ 任務指派] Agent: alpha

📄 被指派的任務：

Analyze the application of AI in the healthcare industry. Focus on the following aspects:

1. Technical Applications: Describe current AI technologies and their specific applications in healthcare.

2. Ethical Challenges: Discuss potential ethical issues and challenges posed by AI applications in healthcare.

3. Future Developments: Predict future trends and potential developments of AI in healthcare.

----------------------------------------

[✅ 任務指派] Agent: beta

📄 被指派的任務：

Analyze the application of AI in the financial industry. Focus on the following aspects:

1. Technical Applications: Describe current AI technologies and their specific applications in finance.

2. Ethical Challenges: Discuss potential ethical issues and challenges posed by AI applications in finance.

3. Future Developments: Predict future trends and potential developments of AI in finance.

----------------------------------------

[✅ 任務指派] Agent: gamma

📄 被指派的任務：

Analyze the application of AI in the education industry. Focus on the following aspects:

1. Technical Applications: Describe current AI technologies and their specific applications in education.

2. Ethical Challenges: Discuss potential ethical issues and challenges posed by AI applications in education.

3. Future Developments: Predict future trends and potential developments of AI in education.

----------------------------------------

AI:'alpha' is helping you with this request.

AI:'beta' is helping you with this request.

AI:'gamma' is helping you with this request.

AI:

[🛠️ Tool Call]: [ToolCall(id='call\_1lbmiwos1CxNR7S8m5qvkaTS', type='function', function=FunctionCall(name='wait', arguments='{"until":"all"}'))]

The content returned by wait is too long (6317 > 6000 tokens), auto truncating...

AI:gamma:To provide a comprehensive analysis of AI in the education industry, I'll break down the task into three parts: technical applications, ethical challenges, and future developments. I'll search for relevant information for each aspect and then synthesize the findings.

### Plan:

1. \*\*Technical Applications\*\*: Search for current AI technologies and their specific applications in education.

2. \*\*Ethical Challenges\*\*: Investigate potential ethical issues and challenges posed by AI applications in education.

3. \*\*Future Developments\*\*: Explore predictions for future trends and potential developments of AI in education.

I'll start by searching for each of these aspects simultaneously.📌 The future is already here: AI and education in 2025

🔗 https://acceleratelearning.stanford.edu/story/the-future-is-already-here-ai-and-education-in-2025/

📝 How AI is transforming education. Victor Lee, associate professor of education at Stanford and faculty lead for AI+Education at the Accelerator, raised the question of what it means to be "AI literate," and the implications for schools. Lee has studied how high school students are currently using AI, such as to check grammar and support group ...

📌 AI in Education: 10 Game-Changing Applications for Schools in 2025

🔗 https://www.cubeo.ai/ai-in-education-10-game-changing-applications-for-schools-in-2025/

📝 Artificial Intelligence is rewriting the rulebook for education. From smarter classrooms to deeply personalized learning paths, AI in education is not just a buzzword—it's a revolution. In 2025 and beyond, schools, colleges, and universities must embrace AI to prepare students for a tech-first world.

📌 How artificial intelligence in education is changing schools

🔗 https://learningsciences.smu.edu/blog/artificial-intelligence-in-education

📝 AI in the classroom: Current applications. The impact of artificial intelligence (AI) on education is already significant, with a variety of applications currently enhancing the learning experience in classrooms and online platforms. Here are some key AI applications making waves in education, supported by insights from industry research:❌ 搜尋失敗：https://lite.duckduckgo.com/lite/ 202 Ratelimit📌 7 Critical Education Trends That Will Define Learning In 2025

🔗 https://www.forbes.com/sites/bernardmarr/2024/12/03/7-critical-education-trends-that-will-define-learning-in-2025/

📝 From virtual classrooms to industry partnerships, discover the seven key trends reshaping how we learn and prepare for an AI-driven future.

📌 The future is already here: AI and education in 2025

🔗 https://acceleratelearning.stanford.edu/story/the-future-is-already-here-ai-and-education-in-2025/

📝 The third Stanford AI+Education Summit brought together researchers, K-12 leaders, educators, and technologists to explore how AI is shaping teaching and learning.

📌 PDF

🔗 https://discover.carnegielearning.com/hubfs/PDFs/Whitepaper+and+Guide+PDFs/2025-AI-in-Ed-Report.pdf?hsLang=en

📝 And so, I'm pleased to present our second annual AI in Education report. Our 2025 national survey of over 650 respondents across 49 states and Puerto Rico reveals both encouraging trends and important challenges. While AI adoption and optimism are growing, concerns about cheating, privacy, and the need for training persist.I've gathered information on each of the three aspects of AI in the education industry. Here's a breakdown:

### 1. Technical Applications:

- \*\*AI Technologies and Applications\*\*: AI is transforming education with applications such as intelligent tutoring systems, personalized learning, automated administrative tasks, and virtual teaching assistants. These technologies help create smarter classrooms and deeply personalized learning paths. Key applications include AI-driven platforms for grammar checking, learning analytics, and adaptive learning systems.

- [AI in Education: 10 Game-Changing Applications for Schools in 2025](https://www.cubeo.ai/ai-in-education-10-game-changing-applications-for-schools-in-2025/)

- [How artificial intelligence in education is changing schools](https://learningsciences.smu.edu/blog/artificial-intelligence-in-education)

### 2. Ethical Challenges:

- \*\*Potential Ethical Issues\*\*: AI in education raises concerns about data privacy, algorithmic bias, and the digital divide. These challenges include ensuring equitable access to AI technologies, protecting student data, and addressing biases in AI algorithms that may affect learning outcomes.

- Unfortunately, I encountered a search failure for this specific query, but these issues are commonly discussed in the context of AI ethics.

### 3. Future Developments:

- \*\*Trends and Developments\*\*: Future trends in AI for education include the integration of AI with virtual classrooms, industry partnerships to enhance learning, and the development of AI literacy programs. The focus will be on preparing students for an AI-driven world and addressing ongoing concerns about AI's role in education.

- [7 Critical Education Trends That Will Define Learning In 2025](https://www.forbes.com/sites/bernardmarr/2024/12/03/7-critical-education-trends-that-will-define-learning-in-2025/)

- [The future is already here: AI and education in 2025](https://acceleratelearning.stanford.edu/story/the-future-is-already-here-ai-and-education-in-2025/)

I can visit specific pages for more detailed information if needed. Let me know if you want to explore any particular aspect further!

=====

beta:To analyze the application of AI in the financial industry, I'll break down the task into three main aspects: Technical Applications, Ethical Challenges, and Future Developments. Here's how I plan to proceed:

1. \*\*Technical Applications\*\*: I will search for current AI technologies and their specific applications in the finance sector to understand how they are being utilized today.

2. \*\*Ethical Challenges\*\*: I will explore potential ethical issues and challenges related to AI applications in finance, focusing on concerns such as bias, transparency, and data privacy.

3. \*\*Future Developments\*\*: I will look for predictions and trends regarding the future of AI in finance to identify potential developments.

To gather this information, I'll perform searches and visit relevant resources. Let's start by conducting searches for each aspect.📌 Gartner Finance Survey Reveals the Top 10 Technologies for Future ...

🔗 https://www.gartner.com/en/newsroom/press-releases/2025-03-19-gartner-finance-survey-reveals-the-top-ten-technologies-for-future-investment-in-finance

📝 Attendees of the Gartner CFO & Finance Executive Conference 2025, taking place 24-25 March in Sydney, will uncover the latest finance insights and technology solutions with experts, peers and service providers. Sessions will cover how organizations can navigate challenges - such as AI in finance, CFO leadership effectiveness, finance talent ...

📌 AI in Financial Markets: Trends and Innovations for 2025

🔗 https://www.analyticsinsight.net/artificial-intelligence/ai-in-financial-markets-trends-and-innovations-for-2025

📝 Explore the top trends and technological innovations shaping the future of AI in financial markets for 2025. Discover how predictive analytics and generative AI are changing the industry AI is rapidly evolving financial technologies through efficiency, innovation, and growth opportunities.

📌 10 Technology And Business Trends That May Revolutionize Finance In 2025

🔗 https://www.forbes.com/councils/forbesfinancecouncil/2025/01/30/10-technology-and-business-trends-that-may-revolutionize-finance-in-2025/

📝 In 2025, the business and finance community must embrace emerging technologies like generative AI, robotics and blockchain to drive efficiency, innovation and transparency.📌 The Legal and Ethical Challenges of AI in the Financial Sector: Lessons ...

🔗 https://lawnethicsintech.medium.com/the-legal-and-ethical-challenges-of-ai-in-the-financial-sector-lessons-from-bis-insights-129c9d46f9a4

📝 3. Ethical Use of AI. Beyond compliance, financial institutions have an ethical responsibility to consider the societal impact of their AI systems. This includes assessing the potential for job displacement, economic inequality, environmental damage, and the broader consequences of AI-driven decisions on vulnerable populations. 4. Manipulation ...

📌 AI In Fintech: Regulations, Opportunities, Ethical Imperatives - Forbes

🔗 https://www.forbes.com/sites/zennonkapron/2025/03/05/ai-in-fintech-regulations-opportunities-ethical-imperatives/

📝 Mar 05, 2025, 11:57pm EST. ... serve as foundational guidelines for ethical AI and data analytics in financial services. ... Key Challenges & Ethical Considerations.

📌 AI Ethics in Finance 2025: Navigating the Moral Maze

🔗 https://toxigon.com/ai-ethics-in-finance-2025

📝 The ethical implications of AI in finance are vast and complex, touching on issues like bias, transparency, and accountability. So, let's dive in and explore what AI ethics in finance looks like in 2025.📌 AI in Finance Statistics 2025: Impact, Future Trends & Key Insights

🔗 https://www.allaboutai.com/resources/ai-statistics/finance/

📝 By 2030, AI in finance is set to generate over $1 trillion in global savings and revenue, revolutionizing how we bank, invest, and manage our finances.. According to Yahoo Finance, as of 2024, AI in the finance market stands at $38.36 billion and is expected to reach $190.33 billion by 2030, growing at an impressive 30.6% CAGR.. Looking ahead to 2025, AI is poised to unlock even greater ...

📌 AI in Financial Markets: Trends and Innovations for 2025

🔗 https://www.analyticsinsight.net/artificial-intelligence/ai-in-financial-markets-trends-and-innovations-for-2025

📝 Agentic AI, also referred to as AI with agency, is one of the top financial market trends for 2025. This class of AI is beyond query-response architecture. It is designed to execute enterprise-relevant tasks autonomously. Agentic AI can support decision-making, enhance situational awareness, and provide insights from derivative events which can ...

📌 Navigating AI Disruption And The New Competitive Edge In Finance - Forbes

🔗 https://www.forbes.com/sites/kathleenwalch/2025/05/23/navigating-ai-disruption-and-the-new-competitive-edge-in-finance/

📝 AI disruption is real and financial organizations ready for change turn volatility into growth and stay ahead while others struggle to keep up. ... first quarter of 2025, and the S&P 500 logged ...I've found some relevant articles and resources for each of the three aspects of AI applications in the financial industry. I'll now summarize the information from these sources to provide a comprehensive analysis.

### 1. Technical Applications

- \*\*AI Technologies in Finance\*\*: Current AI technologies in finance include predictive analytics, generative AI, robotics, and blockchain. These technologies are being utilized to improve efficiency, drive innovation, and enhance transparency within financial markets. Predictive analytics and generative AI are particularly noteworthy for their ability to transform financial operations and decision-making processes.

### 2. Ethical Challenges

- \*\*Ethical Issues\*\*: The ethical challenges of AI in finance encompass bias, transparency, accountability, and the societal impact of AI systems. Financial institutions face the challenge of ensuring their AI systems do not perpetuate biases or inequalities. Transparency and accountability are crucial in maintaining trust, as AI-driven decisions can significantly impact vulnerable populations. Additionally, there is a need to consider the broader societal consequences, such as job displacement and economic inequality.

### 3. Future Developments

- \*\*Future Trends\*\*: AI in finance is expected to grow significantly, with predictions of generating over $1 trillion in global savings and revenue by 2030. The market is anticipated to expand from $38.36 billion in 2024 to $190.33 billion by 2030. Future developments may include the rise of "Agentic AI," which can autonomously execute enterprise-relevant tasks, enhancing decision-making and situational awareness. AI's role in finance will likely focus on unlocking greater efficiency and innovation opportunities.

If you would like more detailed insights from specific articles, feel free to let me know, and I can delve deeper into the content of those sources!

=====

alpha:To analyze the application of AI in the healthcare industry across the specified aspects, I'll break down the task into smaller components and gather information on each. Here's the plan:

1. \*\*Technical Applications\*\*: I'll search for current AI technologies and their specific applications in healthcare.

2. \*\*Ethical Challenges\*\*: I'll look for discussions on potential ethical issues and challenges posed by AI applications in healthcare.

3. \*\*Future Developments\*\*: I'll investigate predictions and potential future trends of AI in healthcare.

I will perform searches in parallel to gather the necessary information for each aspect. Let's proceed with the searches.❌ 搜尋失敗：https://html.duckduckgo.com/html 202 Ratelimit❌ 搜尋失敗：https://lite.duckduckgo.com/lite/ 202 Ratelimit❌ 搜尋失敗：https://lite.duckduckgo.com/lite/ 202 RatelimitIt seems that the search attempts have failed due to rate limiting issues. As an alternative, I will search Arxiv for relevant papers that might provide insights into each of these aspects. Let's proceed with searching Arxiv for papers on these topics.📄 \*\*From Screens to Scenes: A Survey of Embodied AI in Healthcare\*\*

Healthcare systems worldwide face persistent challenges in efficiency,

accessibility, and personalization. Powered by modern AI technologies such as

multimodal large language models and world models, Embodied AI (EmAI)

represents a transformative frontier, offering enhanced autonomy and the

ability to interact with the physical world to address these challenges. As an

interdisciplinary and rapidly evolving research domain, "EmAI in healthcare"

spans diverse fields such as algorithms, robotics, and biomedicine. This

complexity underscores the importance of timely reviews and analyses to track

advancements, address challenges, and foster cross-disciplinary collaboration.

In this paper, we provide a comprehensive overview of the "brain" of EmAI for

healthcare, wherein we introduce foundational AI algorithms for perception,

actuation, planning, and memory, and focus on presenting the healthcare

applications spanning clinical interventions, daily care & companionship,

infrastructure support, and biomedical research. Despite its promise, the

development of EmAI for healthcare is hindered by critical challenges such as

safety concerns, gaps between simulation platforms and real-world applications,

the absence of standardized benchmarks, and uneven progress across

interdisciplinary domains. We discuss the technical barriers and explore

ethical considerations, offering a forward-looking perspective on the future of

EmAI in healthcare. A hierarchical framework of intelligent levels for EmAI

systems is also introduced to guide further development. By providing

systematic insights, this work aims to inspire innovation and practical

applications, paving the way for a new era of intelligent, patient-centered

healthcare.

🔗 http://arxiv.org/abs/2501.07468v3

📄 \*\*AI-Driven Healthcare: A Review on Ensuring Fairness and Mitigating Bias\*\*

Artificial intelligence (AI) is rapidly advancing in healthcare, enhancing

the efficiency and effectiveness of services across various specialties,

including cardiology, ophthalmology, dermatology, emergency medicine, etc. AI

applications have significantly improved diagnostic accuracy, treatment

personalization, and patient outcome predictions by leveraging technologies

such as machine learning, neural networks, and natural language processing.

However, these advancements also introduce substantial ethical and fairness

challenges, particularly related to biases in data and algorithms. These biases

can lead to disparities in healthcare delivery, affecting diagnostic accuracy

and treatment outcomes across different demographic groups. This review paper

examines the integration of AI in healthcare, highlighting critical challenges

related to bias and exploring strategies for mitigation. We emphasize the

necessity of diverse datasets, fairness-aware algorithms, and regulatory

frameworks to ensure equitable healthcare delivery. The paper concludes with

recommendations for future research, advocating for interdisciplinary

approaches, transparency in AI decision-making, and the development of

innovative and inclusive AI applications.

🔗 http://arxiv.org/abs/2407.19655v2

📄 \*\*Reliable and Resilient AI and IoT-based Personalised Healthcare Services: A Survey\*\*

Recent technological and economic developments have transformed the

healthcare sector towards more personalized and IoT-based healthcare services.

These services are realized through control and monitoring applications that

are typically developed using artificial intelligence/machine learning-based

algorithms, which play a significant role in highlighting the efficiency of

traditional healthcare systems. Current personalized healthcare services are

dedicated to a specific environment to support technological personalization.

However, they are unable to consider different interrelated health conditions,

leading to inappropriate diagnoses and affecting sustainability and the

long-term health of patients. To this end, current Healthcare 5.0 technology

has evolved that supersede previous healthcare technologies. The goal of

healthcare 5.0 is to achieve an autonomous healthcare service, that takes into

account the interdependent effect of different health conditions of a patient.

This paper conducts a comprehensive survey on personalized healthcare services.

In particular, we first present an overview of key requirements of

comprehensive personalized healthcare services in modern healthcare Internet of

Things (HIoT), including the definition of personalization and an example use

case scenario as a representative for modern HIoT. Second, we explored a

fundamental three-layer architecture for IoT-based healthcare systems using AI

and non-AI-based approaches, considering key requirements for CPHS followed by

their strengths and weaknesses in the frame of personalized healthcare

services. Third, we highlighted different security threats against each layer

of IoT architecture along with the possible AI and non-AI-based solutions.

Finally, we propose a methodology to develop reliable, resilient, and

personalized healthcare services that address the identified weaknesses of

existing approaches.

🔗 http://arxiv.org/abs/2209.05457v1📄 \*\*Ethical AI in the Healthcare Sector: Investigating Key Drivers of Adoption through the Multi-Dimensional Ethical AI Adoption Model (MEAAM)\*\*

The adoption of Artificial Intelligence (AI) in the healthcare service

industry presents numerous ethical challenges, yet current frameworks often

fail to offer a comprehensive, empirical understanding of the multidimensional

factors influencing ethical AI integration. Addressing this critical research

gap, this study introduces the Multi-Dimensional Ethical AI Adoption Model

(MEAAM), a novel theoretical framework that categorizes 13 critical ethical

variables across four foundational dimensions of Ethical AI Fair AI,

Responsible AI, Explainable AI, and Sustainable AI. These dimensions are

further analyzed through three core ethical lenses: epistemic concerns (related

to knowledge, transparency, and system trustworthiness), normative concerns

(focused on justice, autonomy, dignity, and moral obligations), and overarching

concerns (highlighting global, systemic, and long-term ethical implications).

This study adopts a quantitative, cross-sectional research design using survey

data collected from healthcare professionals and analyzed via Partial Least

Squares Structural Equation Modeling (PLS-SEM). Employing PLS-SEM, this study

empirically investigates the influence of these ethical constructs on two

outcomes Operational AI Adoption and Systemic AI Adoption. Results indicate

that normative concerns most significantly drive operational adoption

decisions, while overarching concerns predominantly shape systemic adoption

strategies and governance frameworks. Epistemic concerns play a facilitative

role, enhancing the impact of ethical design principles on trust and

transparency in AI systems. By validating the MEAAM framework, this research

advances a holistic, actionable approach to ethical AI adoption in healthcare

and provides critical insights for policymakers, technologists, and healthcare

administrators striving to implement ethically grounded AI solutions.

🔗 http://arxiv.org/abs/2505.02062v1

📄 \*\*Implications of Artificial Intelligence on Health Data Privacy and Confidentiality\*\*

The rapid integration of artificial intelligence (AI) in healthcare is

revolutionizing medical diagnostics, personalized medicine, and operational

efficiency. However, alongside these advancements, significant challenges arise

concerning patient data privacy, ethical considerations, and regulatory

compliance. This paper examines the dual impact of AI on healthcare,

highlighting its transformative potential and the critical need for

safeguarding sensitive health information. It explores the role of the Health

Insurance Portability and Accountability Act (HIPAA) as a regulatory framework

for ensuring data privacy and security, emphasizing the importance of robust

safeguards and ethical standards in AI-driven healthcare. Through case studies,

including AI applications in diabetic retinopathy, oncology, and the

controversies surrounding data sharing, this study underscores the ethical and

legal complexities of AI implementation. A balanced approach that fosters

innovation while maintaining patient trust and privacy is imperative. The

findings emphasize the importance of continuous education, transparency, and

adherence to regulatory frameworks to harness AI's full potential responsibly

and ethically in healthcare.

🔗 http://arxiv.org/abs/2501.01639v2

📄 \*\*AI Ethics in Smart Healthcare\*\*

This article reviews the landscape of ethical challenges of integrating

artificial intelligence (AI) into smart healthcare products, including medical

electronic devices. Differences between traditional ethics in the medical

domain and emerging ethical challenges with AI-driven healthcare are presented,

particularly as they relate to transparency, bias, privacy, safety,

responsibility, justice, and autonomy. Open challenges and recommendations are

outlined to enable the integration of ethical principles into the design,

validation, clinical trials, deployment, monitoring, repair, and retirement of

AI-based smart healthcare products.

🔗 http://arxiv.org/abs/2211.06346v1📄 \*\*AI Governance in the Context of the EU AI Act: A Bibliometric and Literature Review Approach\*\*

The rapid advancement of artificial intelligence (AI) has brought about

significant societal changes, necessitating robust AI governance frameworks.

This study analyzed the research trends in AI governance within the framework

of the EU AI Act. This study conducted a bibliometric analysis to examine the

publications indexed in the Web of Science database. Our findings reveal that

research on AI governance, particularly concerning AI systems regulated by the

EU AI Act, remains relatively limited compared to the broader AI research

landscape. Nonetheless, a growing interdisciplinary interest in AI governance

is evident, with notable contributions from multi-disciplinary journals and

open-access publications. Dominant research themes include ethical

considerations, privacy concerns, and the growing impact of generative AI, such

as ChatGPT. Notably, education, healthcare, and worker management are prominent

application domains. Keyword network analysis highlights education, ethics, and

ChatGPT as central keywords, underscoring the importance of these areas in

current AI governance research. Subsequently, a comprehensive literature review

was undertaken based on the bibliometric analysis findings to identify research

trends, challenges, and insights within the categories of the EU AI Act. The

findings provide valuable insights for researchers and policymakers, informing

future research directions and contributing to developing comprehensive AI

governance frameworks beyond the EU AI Act.

🔗 http://arxiv.org/abs/2502.03468v1

📄 \*\*DeepSeek reshaping healthcare in China's tertiary hospitals\*\*

The rapid integration of artificial intelligence (AI) into healthcare is

transforming clinical decision-making and hospital operations. DeepSeek has

emerged as a leading AI system, widely deployed across China's tertiary

hospitals since January 2025. Initially implemented in Shanghai's major medical

institutions, it has since expanded nationwide, enhancing diagnostic accuracy,

streamlining workflows, and improving patient management. AI-powered pathology,

imaging analysis, and clinical decision support systems have demonstrated

significant potential in optimizing medical processes and reducing the

cognitive burden on healthcare professionals. However, the widespread adoption

of AI in healthcare raises critical regulatory and ethical challenges,

particularly regarding accountability in AI-assisted diagnosis and the risk of

automation bias. The absence of a well-defined liability framework underscores

the need for policies that ensure AI functions as an assistive tool rather than

an autonomous decision-maker. With continued technological advancements, AI is

expected to integrate multimodal data sources, such as genomics and radiomics,

paving the way for precision medicine and personalized treatment strategies.

The future of AI in healthcare depends on the development of transparent

regulatory structures, industry collaboration, and adaptive governance

frameworks that balance innovation with responsibility, ensuring equitable and

effective AI-driven medical services.

🔗 http://arxiv.org/abs/2502.16732v2

📄 \*\*Over-Relying on Reliance: Towards Realistic Evaluations of AI-Based Clinical Decision Support\*\*

As AI-based clinical decision support (AI-CDS) is introduced in more and more

aspects of healthcare services, HCI research plays an increasingly important

role in designing for complementarity between AI and clinicians. However,

current evaluations of AI-CDS often fail to capture when AI is and is not

useful to clinicians. This position paper reflects on our work and influential

AI-CDS literature to advocate for moving beyond evaluation metrics like Trust,

Reliance, Acceptance, and Performance on the AI's task (what we term the "trap"

of human-AI collaboration). Although these metrics can be meaningful in some

simple scenarios, we argue that optimizing for them ignores important ways that

AI falls short of clinical benefit, as well as ways that clinicians

successfully use AI. As the fields of HCI and AI in healthcare develop new ways

to design and evaluate CDS tools, we call on the community to prioritize

ecologically valid, domain-appropriate study setups that measure the emergent

forms of value that AI can bring to healthcare professionals.

🔗 http://arxiv.org/abs/2504.07423v1Here's a summary of the findings from recent Arxiv papers on the application of AI in the healthcare industry:

### 1. Technical Applications

- \*\*Embodied AI in Healthcare\*\*: AI technologies like multimodal large language models and world models are being applied in healthcare to enhance autonomy and interaction with the physical world. Applications span clinical interventions, daily care, companionship, infrastructure support, and biomedical research. Despite its promise, challenges such as safety concerns and gaps between simulation and real-world applications exist ([Source](http://arxiv.org/abs/2501.07468v3)).

- \*\*AI-Driven Personalized Healthcare\*\*: AI and IoT are transforming healthcare towards more personalized services. AI-based systems play a significant role in improving the efficiency of traditional healthcare, with a focus on comprehensive personalized healthcare services. This includes considering interrelated health conditions, which is essential for accurate diagnoses ([Source](http://arxiv.org/abs/2209.05457v1))....

AI:以下是關於 AI 在醫療、金融和教育產業應用的報告，涵蓋了技術應用、倫理挑戰與未來發展的分析。

## 1. 醫療產業

### 技術應用

AI 在醫療領域的應用包括多模態大語言模型和世界模型等技術，用於提升自動化和與物理世界的互動能力。這些技術應用於臨床干預、日常護理、基礎設施支持和生物醫學研究。AI 和物聯網（IoT）技術也在推動個性化醫療服務的發展，這些系統有助於提升傳統醫療的效率，特別是在考慮患者的多重健康狀況時尤為重要。

### 倫理挑戰

AI 在醫療中的倫理挑戰主要涉及數據隱私、算法偏見和責任歸屬問題。AI 系統可能存在數據偏見，影響診斷準確性和治療效果，特別是在不同人口統計群體中。此外，AI 在輔助診斷中的責任問題仍需明確，這需要政策制定者和技術開發者之間的合作。

### 未來發展

未來，AI 在醫療中的發展將集中於精準醫療和個性化治療策略的實現。這包括整合基因組學和影像學數據，以支持更精確的醫療決策。透明的監管結構和行業合作將是推動 AI 醫療服務創新與責任平衡的關鍵。

## 2. 金融產業

### 技術應用

目前，AI 在金融領域的應用主要包括預測分析、生成式 AI、機器人技術和區塊鏈。這些技術被用來提高金融市場的效率、創新和透明度。預測分析和生成式 AI 尤其在改變金融操作和決策過程中表現突出。

### 倫理挑戰

AI 在金融中的倫理挑戰涵蓋偏見、透明度和問責制。金融機構需要確保其 AI 系統不會加劇現有的不平等或偏見。此外，透明度和問責制對於維持信任至關重要，因為 AI 驅動的決策可能對弱勢群體產生重大影響。

### 未來發展

預計到 2030 年，AI 在金融中的應用將帶來超過 1 兆美元的全球節省和收入。未來可能會出現“Agentic AI”，能夠自主執行企業相關任務，從而提升決策能力和情境感知。AI 在金融中的角色將專注於解鎖更高效和創新的機會。

## 3. 教育產業

### 技術應用

AI 在教育中的應用包括智能輔導系統、個性化學習、行政任務自動化和虛擬教學助理。這些技術有助於創建更智能的教室和深度個性化的學習路徑，並通過 AI 驅動的平台進行語法檢查和學習分析。

### 倫理挑戰

AI 在教育中的倫理挑戰包括數據隱私、算法偏見和數字鴻溝。這些問題涉及確保對 AI 技術的公平使用、保護學生數據以及解決 AI 算法中可能影響學習結果的偏見。

### 未來發展

未來，AI 在教育中的趨勢包括與虛擬教室的整合、行業合作以提升學習效果，以及開發 AI 素養計畫。重點將是為學生準備好一個由 AI 驅動的世界，同時解決 AI 在教育中的角色的持續關注。

這些分析展示了 AI 在三個關鍵產業中的應用潛力和挑戰，未來的發展將取決於技術創新、政策制定和倫理考量的平衡。

USER: exit

👋 使用者中斷。再見！

(crew\_env) C:\Users\USER\Downloads\Test\_Agent\Test\_5>