

# AutoGen Literature Research Assistants

A group of GPT-4 Agents that help you with your literature research. They help you search for arXiv papers, group them by topic and plot them in charts. Helps for Bachelor's or Master's Thesis research.

# PROBLEM



## STUDENTS SPEND A LOT OF TIME WITH RESEARCH

Time Spent	Total	Percentage
Up to 1 hour	162/676	23.96
1-2 hours	221/676	32.69
2-3 hours	183/676	27.07
3-4 hours	78/676	11.54
>4 hours	32/676	4.73
Total Time Spend (hrs)	(T)= 1287	
Average Time Spend (hrs)	Mean= 1.90	

Time Spend on Reading Daily



## LITERATURE REVIEW

Typically, a literature review comprises 20-40% of the thesis, equating to around 20-40 pages, yet this can fluctuate based on the topic, field, and institutional guidelines. However, if the literature review is for an assignment/project report it only needs to be a few pages long.

<https://academiainsider.com/how-long-should-a-literature-review-be-writing-a-literature-review-properly/>

# SOLUTION

## FASTER SEARCH

AutoGen Agents can help you with your literature research. Write to the chatbot which topic you want to see papers on. The AutoGen Coder writes the code to find the papers and the results are listed for you.

## CATEGORIZATION

You can have the agents sort the papers they find by category

## VISUALIZATION

You can display the categories created in this way as diagrams

# DEMONSTRATION

Chainlit Chat Readme

**Chatbot** 10:03:40 AM Literature Research Agent Team 🗂️🔍🧠🤖  
We can help you with your research. We can also create charts regarding the domains, topics etc.  
This might be helpful for you Bachelor's or Master's Thesis 😊

⌆ + |Type your message here... 📤

**Chatbot** 10:20:57 AM Literature Research Agent Team 🗂️🔍🧠🤖  
We can help you with your research. We can also create charts regarding the domains, topics etc.  
This might be helpful for you Bachelor's or Master's Thesis 😊

10:20:57 AM Start searching with code interpreter

**User** 10:21:42 AM Find arxiv papers that show how multimodal large language models can be used in medicine and health

**assistant** 10:21:44 AM To find arXiv papers related to multimodal large language models in medicine and health, we can use the arXiv API to search for relevant papers. I will write a Python script that queries the arXiv API and prints the titles and URLs of the top 10 relevant papers.  
Please execute the following Python code: ⌵ ⬇

**user** 10:21:44 AM exitcode: 0 (execution succeeded)  
Code output:

1. Domain-adapted large language models for classifying nuclear medicine reports  
URL: <http://arxiv.org/abs/2303.01258v1>
2. HealthPrism: A Visual Analytics System for Exploring Children's Physical and Mental Health Profiles with Multimodal Data  
URL: <http://arxiv.org/abs/2307.12242v1>
3. Conversational Health Agents: A Personalized LLM-Powered Agent Framework  
URL: <http://arxiv.org/abs/2310.02374v2>
4. Multimodal LLMs for health grounded in individual-specific data  
URL: <http://arxiv.org/abs/2307.09018v2>
5. Improving Clinical Outcome Predictions Using Convolution over Medical Entities with Multimodal Learning  
URL: <http://arxiv.org/abs/2011.12349v2>
6. Considerations for health care institutions training large language models on electronic health records

⌆ + |Type your message here... 📤

# DEMONSTRATION

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URL: <http://arxiv.org/abs/2011.12349v2>
6. Considerations for health care institutions training large language models on electronic health records  
URL: <http://arxiv.org/abs/2309.12339v1>
7. Question-Driven Summarization of Answers to Consumer Health Questions  
URL: <http://arxiv.org/abs/2005.09067v2>
8. Did you take the pill? - Detecting Personal Intake of Medicine from Twitter  
URL: <http://arxiv.org/abs/1808.02082v1>
9. Large Multimodal Models: Notes on CVPR 2023 Tutorial  
URL: <http://arxiv.org/abs/2306.14895v1>
10. Digital Twins for Patient Care via Knowledge Graphs and Closed-Form Continuous-Time Liquid Neural Networks  
URL: <http://arxiv.org/abs/2307.04772v1>

assistant  
10:21:44 AM  
I have found the top 10 arXiv papers related to multimodal large language models in medicine and health. Here are the titles and URLs:

1. Domain-adapted large language models for classifying nuclear medicine reports  
URL: <http://arxiv.org/abs/2303.01258v1>
2. HealthPrism: A Visual Analytics System for Exploring Children's Physical and Mental Health Profiles with Multimodal Data  
URL: <http://arxiv.org/abs/2307.12242v1>
3. Conversational Health Agents: A Personalized LLM-Powered Agent Framework  
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Please review these papers to learn more about how multimodal large language models can be used in medicine and health. TERMINATE

# DEMONSTRATION

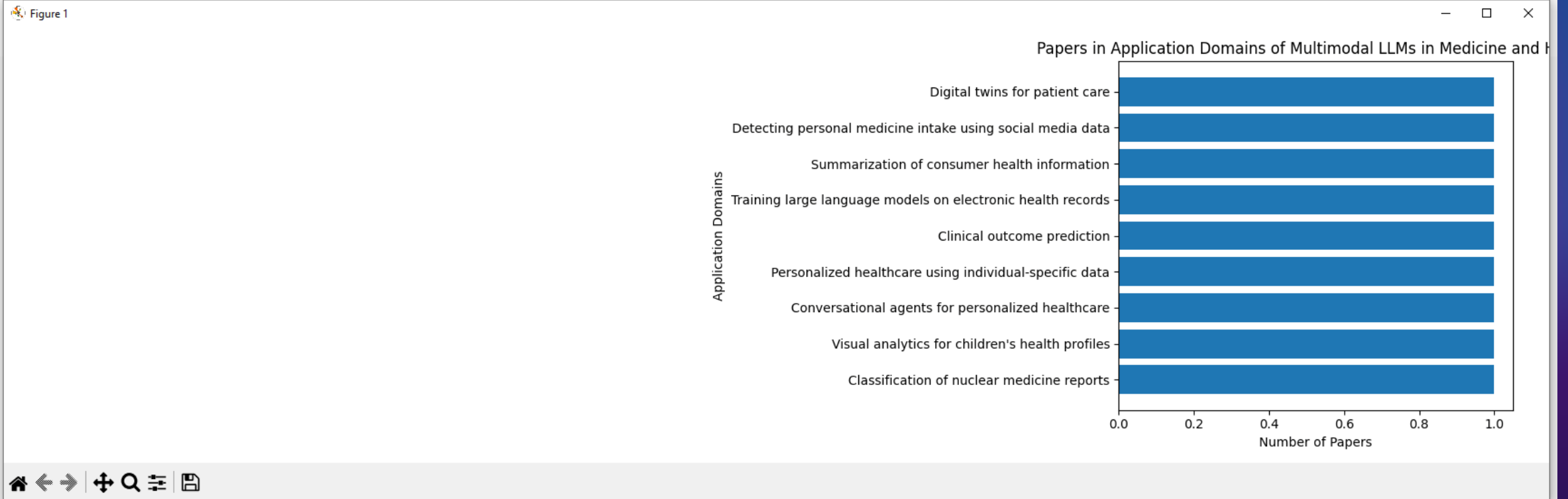
User  
10:24:10 AM  
analyze the results above to list the application domains studied in these papers

assistant  
10:24:34 AM  
I have analyzed the top 10 arXiv papers related to multimodal large language models in medicine and health. Here are the application domains studied in these papers:

1. Domain-adapted large language models for classifying nuclear medicine reports
  - Application domain: Classification of nuclear medicine reports
2. HealthPrism: A Visual Analytics System for Exploring Children's Physical and Mental Health Profiles with Multimodal Data
  - Application domain: Visual analytics for children's physical and mental health profiles
3. Conversational Health Agents: A Personalized LLM-Powered Agent Framework
  - Application domain: Conversational agents for personalized healthcare
4. Multimodal LLMs for health grounded in individual-specific data
  - Application domain: Personalized healthcare using individual-specific data
5. Improving Clinical Outcome Predictions Using Convolution over Medical Entities with Multimodal Learning
  - Application domain: Clinical outcome prediction
6. Considerations for health care institutions training large language models on electronic health records
  - Application domain: Training large language models on electronic health records
7. Question-Driven Summarization of Answers to Consumer Health Questions
  - Application domain: Summarization of consumer health information
8. Did you take the pill? - Detecting Personal Intake of Medicine from Twitter
  - Application domain: Detecting personal medicine intake using social media data
9. Large Multimodal Models: Notes on CVPR 2023 Tutorial
  - Application domain: This paper is a tutorial on large multimodal models and does not focus on a specific application domain.
10. Digital Twins for Patient Care via Knowledge Graphs and Closed-Form Continuous-Time Liquid Neural Networks
  - Application domain: Digital twins for patient care using knowledge graphs and neural networks

These papers cover a variety of application domains, including classification of medical reports, visual

# DEMONSTRATION



Application domain: Digital twins for patient care using knowledge graphs and neural networks

These papers cover a variety of application domains, including classification of medical reports, visual analytics for health profiles, conversational agents, personalized healthcare, clinical outcome prediction, training models on electronic health records, summarization of health information, detecting medicine intake from social media, and digital twins for patient care.



User  
10:27:11 AM

Use this data to generate a bar chart of domains and number of papers in that domain and save it to a file

THANK YOU FOR YOUR  
ATTENTION