Provide the arxiv search term: Applications using LLM

Please wait, this might take a few minutes...

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

> Successfully fetched 10 papers

> Downloading 2406\_10300v1.pdf...

> Downloading 2405\_19888v1.pdf...

> Downloading 2404\_14809v1.pdf...

> Downloading 2307\_09793v1.pdf...

> Downloading 2402\_14805v1.pdf...

> Downloading 2310\_10049v1.pdf...

> Downloading 2405\_14748v1.pdf...

> Downloading 2402\_08806v1.pdf...

> Downloading 2406\_00936v1.pdf...

> Downloading 2406\_09834v1.pdf...

Building Agents: 100%

 10/10 [00:28<00:00,  2.76s/it]

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

Papers I have knowledge on

> Large Language Models as Software Components: A Taxonomy for LLM-Integrated Applications

> Parrot: Efficient Serving of LLM-based Applications with Semantic Variable

> A Survey of Large Language Models on Generative Graph Analytics: Query, Learning, and Applications

> On the Origin of LLMs: An Evolutionary Tree and Graph for 15,821 Large Language Models

> Identifying Multiple Personalities in Large Language Models with External Evaluation

> FATE-LLM: A Industrial Grade Federated Learning Framework for Large Language Models

> MultiCast: Zero-Shot Multivariate Time Series Forecasting Using LLMs

> Combining Insights From Multiple Large Language Models Improves Diagnostic Accuracy

> A Survey of Useful LLM Evaluation

> How and Why LLMs Use Deprecated APIs in Code Completion? An Empirical Study

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

> Type 'exit' to close the chat <

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

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

User: My idea is "Use computer vision for guiding blind people". Show me references to related papers.

**Thought: The user is looking for references to related papers on using computer vision for guiding blind people. I should use a tool to help find relevant papers.**

**Action: base\_query\_engine**

**Action Input: {'input': 'Use computer vision for guiding blind people related papers'}**

**Observation: Yifan Song, Weimin Xiong, Dawei Zhu, Wenhao Wu, Han Qian, Mingbo Song, Hailiang Huang, Cheng Li, Ke Wang, Rong Yao, Ye Tian, and Sujian Li. 2023b. Restgpt: Connecting large language models with real-world restful apis.**

**Thought: The tool has provided a relevant paper titled "Restgpt: Connecting large language models with real-world restful APIs." I should continue using the tool to find more references related to using computer vision for guiding blind people.**

**Action: base\_query\_engine**

**Action Input: {'input': 'Use computer vision for guiding blind people related papers'}**

**Observation: Yifan Song, Weimin Xiong, Dawei Zhu, Wenhao Wu, Han Qian, Mingbo Song, Hailiang Huang, Cheng Li, Ke Wang, Rong Yao, Ye Tian, and Sujian Li. 2023b. Restgpt: Connecting large language models with real-world restful apis.**

**Thought: The tool has provided the same reference again. I will try another tool to find more diverse references related to using computer vision for guiding blind people.**

**Action: compare\_tool**

**Action Input: {'input': 'Use computer vision for guiding blind people related papers'}**

Generated 4 sub questions.

**[tool\_2406\_00936v1] Q: What are the latest advancements in using computer vision for guiding blind people?**

Added user message to memory: What are the latest advancements in using computer vision for guiding blind people?

**[tool\_2406\_09834v1] Q: How do Large Language Models (LLMs) struggle with using up-to-date APIs in code completion for computer vision applications?**

Added user message to memory: How do Large Language Models (LLMs) struggle with using up-to-date APIs in code completion for computer vision applications?

**[tool\_2406\_10300v1] Q: What taxonomy is used for integrating Large Language Models (LLMs) in computer vision applications?**

Added user message to memory: What taxonomy is used for integrating Large Language Models (LLMs) in computer vision applications?

**[tool\_2402\_08806v1] Q: How does aggregating responses from multiple Large Language Models (LLMs) improve diagnostic accuracy in computer vision applications for guiding blind people?**

Added user message to memory: How does aggregating responses from multiple Large Language Models (LLMs) improve diagnostic accuracy in computer vision applications for guiding blind people?

=== Calling Function ===

Calling function: vector\_tool\_2406\_10300v1 with args: {"input":"taxonomy for integrating Large Language Models (LLMs) in computer vision applications"}

=== Calling Function ===

Calling function: vector\_tool\_2406\_00936v1 with args: {"input":"latest advancements in using computer vision for guiding blind people"}

=== Calling Function ===

Calling function: vector\_tool\_2406\_09834v1 with args: {"input":"Large Language Models (LLMs) struggle with using up-to-date APIs in code completion for computer vision applications due to their limited ability to understand the context and requirements of specialized domains like computer vision. LLMs may not have been trained on the latest APIs or may lack the specific knowledge required for computer vision tasks, leading to inaccurate or incomplete code suggestions. Additionally, LLMs may struggle with understanding the nuances of computer vision concepts and may provide generic or outdated recommendations that do not align with the current best practices in the field."}

Got output: Recent advancements in utilizing computer vision for assisting visually impaired individuals have shown promising results. These advancements include the development of systems that leverage computer vision technology to help guide blind people in navigating their surroundings. By incorporating visual recognition capabilities and real-time processing, these systems aim to enhance the independence and safety of individuals with visual impairments.

========================

Got output: The taxonomy discussed in the provided context focuses on integrating Large Language Models (LLMs) in software systems, emphasizing their use in various applications and the framework for analyzing and describing these integrations.

========================

=== Calling Function ===

Calling function: vector\_tool\_2402\_08806v1 with args: {"input":"Aggregating responses from multiple Large Language Models (LLMs) can improve diagnostic accuracy in computer vision applications for guiding blind people by leveraging the diversity of responses. By combining the outputs of multiple LLMs, the system can reduce individual model biases and errors, leading to more robust and accurate predictions. This ensemble approach helps in capturing a broader range of features and patterns in the data, enhancing the overall performance of the system. Additionally, aggregating responses can also provide a measure of confidence or uncertainty in the predictions, allowing for better decision-making in guiding blind individuals based on the computer vision outputs."}

**[tool\_2406\_10300v1] A: The taxonomy used for integrating Large Language Models (LLMs) in computer vision applications focuses on their use in software systems and provides a framework for analyzing and describing these integrations.**

**[tool\_2406\_00936v1] A: Recent advancements in utilizing computer vision for assisting visually impaired individuals have shown promising results. These advancements include the development of systems that leverage computer vision technology to help guide blind people in navigating their surroundings. By incorporating visual recognition capabilities and real-time processing, these systems aim to enhance the independence and safety of individuals with visual impairments.**

Got output: Large Language Models (LLMs) may indeed face challenges when it comes to utilizing the most current APIs for computer vision applications. This could be attributed to potential gaps in their training data regarding the latest APIs or a lack of specialized knowledge necessary for computer vision tasks. Consequently, their code suggestions might be inaccurate or incomplete. Furthermore, due to their general nature, LLMs might struggle to grasp the intricacies of computer vision concepts, potentially resulting in outdated or generic recommendations that do not align with the current standards in the field.

========================

Got output: Aggregating responses from multiple Large Language Models (LLMs) can indeed enhance diagnostic accuracy by leveraging the diversity of responses. This approach helps mitigate individual model biases and errors, leading to more robust and accurate predictions. By combining outputs from various LLMs, a broader range of features and patterns in the data can be captured, ultimately improving the system's overall performance. Additionally, aggregating responses can offer insights into the confidence or uncertainty of predictions, facilitating better decision-making in guiding blind individuals based on computer vision outputs.

========================

**[tool\_2406\_09834v1] A: Large Language Models (LLMs) struggle with using up-to-date APIs in code completion for computer vision applications due to their limited ability to understand the context and requirements of specialized domains like computer vision. LLMs may not have been trained on the latest APIs or may lack the specific knowledge required for computer vision tasks, leading to inaccurate or incomplete code suggestions. Additionally, LLMs may struggle with understanding the nuances of computer vision concepts and may provide generic or outdated recommendations that do not align with the current best practices in the field.**

**[tool\_2402\_08806v1] A: Aggregating responses from multiple Large Language Models (LLMs) can improve diagnostic accuracy in computer vision applications for guiding blind people by leveraging the diversity of responses. This approach helps mitigate individual model biases and errors, leading to more robust and accurate predictions. By combining outputs from various LLMs, a broader range of features and patterns in the data can be captured, ultimately improving the system's overall performance. Additionally, aggregating responses can offer insights into the confidence or uncertainty of predictions, facilitating better decision-making in guiding blind individuals based on computer vision outputs.**

**Observation: Utilizing computer vision for guiding blind people has been a topic of interest in recent research papers. Researchers have explored various advancements in computer vision technology to assist visually impaired individuals in navigating their surroundings more effectively and safely. These papers often focus on developing systems that incorporate visual recognition capabilities and real-time processing to enhance the independence and quality of life for individuals with visual impairments. By leveraging computer vision advancements, these studies aim to provide innovative solutions for guiding blind people through their environments.**

**Thought: The comparison tool has provided a summary of recent research papers related to utilizing computer vision for guiding blind people. This information gives an overview of the advancements and goals of these studies. I can now provide an answer using the user's language.**

**Answer: Utilizing computer vision technology to assist blind people in navigating their surroundings has been a focus of recent research papers. These studies aim to enhance independence and quality of life by developing systems with visual recognition capabilities and real-time processing.**

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Agent: Utilizing computer vision technology to assist blind people in navigating their surroundings has been a focus of recent research papers. These studies aim to enhance independence and quality of life by developing systems with visual recognition capabilities and real-time processing.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

User: Show the difference between fate llm and multicast

**Thought: I need to compare FATE-LLM and MultiCast to highlight their differences.**

**Action: compare\_tool**

**Action Input: {'input': 'FATE-LLM vs MultiCast'}**

Generated 2 sub questions.

**[tool\_2310\_10049v1] Q: What are the key components of FATE-LLM?**

Added user message to memory: What are the key components of FATE-LLM?

**[tool\_2405\_14748v1] Q: How does MultiCast address the challenge of handling one-dimensional data in LLMs?**

Added user message to memory: How does MultiCast address the challenge of handling one-dimensional data in LLMs?

=== Calling Function ===

Calling function: vector\_tool\_2310\_10049v1 with args: {"input":"Key components of FATE-LLM"}

=== Calling Function ===

Calling function: vector\_tool\_2405\_14748v1 with args: {"input":"MultiCast addressing the challenge of handling one-dimensional data in LLMs"}

Got output: The key components of FATE-LLM are the Communication-Efficient Hub, FedLLM Model Hub, and FedLLM Privacy Hub.

========================

**[tool\_2310\_10049v1] A: The key components of FATE-LLM are the Communication-Efficient Hub, FedLLM Model Hub, and FedLLM Privacy Hub.**

Got output: MultiCast addresses the challenge of handling one-dimensional data in LLMs by introducing three novel token multiplexing techniques that allow LLMs to receive multivariate time series as input. These techniques effectively reduce dimensionality while preserving key repetitive patterns in the data. Additionally, a quantization scheme is implemented to assist LLMs in better learning these patterns while reducing token use for practical applications.

========================

**[tool\_2405\_14748v1] A: MultiCast addresses the challenge of handling one-dimensional data in LLMs by introducing three novel token multiplexing techniques that allow LLMs to receive multivariate time series as input. These techniques effectively reduce dimensionality while preserving key repetitive patterns in the data. Additionally, a quantization scheme is implemented to assist LLMs in better learning these patterns while reducing token use for practical applications.**

**Observation: FATE-LLM focuses on components such as the Communication-Efficient Hub, FedLLM Model Hub, and FedLLM Privacy Hub, while MultiCast addresses the challenge of handling one-dimensional data in LLMs by introducing novel token multiplexing techniques and a quantization scheme to reduce dimensionality and preserve key patterns in the data.**

**Thought: I can answer the question with the provided information.**

**Answer: FATE-LLM emphasizes components like Communication-Efficient Hub, FedLLM Model Hub, and FedLLM Privacy Hub, while MultiCast tackles the issue of handling one-dimensional data in LLMs through token multiplexing methods and a quantization scheme to reduce dimensionality and maintain essential patterns in the data.**

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Agent: FATE-LLM emphasizes components like Communication-Efficient Hub, FedLLM Model Hub, and FedLLM Privacy Hub, while MultiCast tackles the issue of handling one-dimensional data in LLMs through token multiplexing methods and a quantization scheme to reduce dimensionality and maintain essential patterns in the data.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

User: Is there any paper related to "Automated planting of trees"

**Thought: The user is looking for papers related to the automated planting of trees.**

**Action: base\_query\_engine**

**Action Input: {'input': 'Automated planting of trees'}**

**Observation: Automated planting of trees is not directly discussed in the provided context information.**

**Thought: I cannot answer the question with the provided tools.**

**Answer: There is no direct information available on papers related to the automated planting of trees in the context provided.**

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Agent: There is no direct information available on papers related to the automated planting of trees in the context provided.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

User: Summarize the origin of LLM

**Thought: The user is asking for a summary of the origin of Large Language Models (LLMs).**

**Action: base\_query\_engine**

**Action Input: {'input': 'Origin of Large Language Models'}**

**Observation: The paper discusses the evolutionary tree and graph for a large number of Large Language Models (LLMs), exploring their backbones, settings, training methods, and families. It presents a public web application called Constellation that allows users to navigate and explore 15,821 LLMs, providing various visualizations like dendrograms, graphs, word clouds, and scatter plots.**

**Thought: I can answer without using any more tools. I'll use the user's language to answer**

**Answer: The origin of Large Language Models (LLMs) can be traced back to the development and evolution of various models, settings, training methods, and families. A paper discusses a comprehensive analysis of LLMs through a public web application called Constellation, which offers visualizations and insights into a vast number of LLMs, enabling users to explore their characteristics and relationships.**

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Agent: The origin of Large Language Models (LLMs) can be traced back to the development and evolution of various models, settings, training methods, and families. A paper discusses a comprehensive analysis of LLMs through a public web application called Constellation, which offers visualizations and insights into a vast number of LLMs, enabling users to explore their characteristics and relationships.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

User: exit