

Research Journal Engagement in Agricultural Education: An AI-Driven Approach

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In research, it is paramount for graduate students and researchers to remain updated with the latest research journals to advance knowledge and enhance their own research. However, the sheer volume of research articles can pose a significant challenge, making it time-consuming and laborious to access and digest this wealth of information. To overcome this obstacle, some researchers are utilizing generative artificial intelligence (AI) to streamline engagement with the existing research (Dwivedi, 2023).

Researchers are increasingly turning to innovative tools such as Research Rabbit, Lit Maps, and Elicit to enhance their efficiency in conducting literature reviews (Hu, 2023). These tools offer unique capabilities that streamline the process of identifying relevant research articles, extracting key information, and synthesizing findings.

The integration of AI in this context represents a more efficient approach to facilitating access to and interaction with research articles. Researchers may now efficiently navigate through the vast repository of articles, enabling them to quickly identify relevant research and glean insights that can inform their work (Van Noorden, 2023). These innovative tools not only save time but also enhance the overall research experience, empowering graduate students and researchers to stay at the forefront of agricultural education advancements.

Need for Innovation or Idea

In agricultural education, staying abreast of the latest research is crucial for advancing knowledge and improving practices. However, accessing and digesting a vast amount of research articles can be time-consuming and challenging. To address this need, we developed an innovative solution that leverages artificial intelligence (AI) to enhance research collaboration.

How It Works/Methodology/Program Phases/Steps

The researcher began by downloading the last five years' worth of research articles from the Journal of Agricultural Education. Next, these articles were uploaded into a vector database, which enabled researchers to convert text data into numerical vectors that represent the semantic meaning of each article (Douglas, 2023).

Using these vectors, researchers next created an AI bot capable of interacting with the vector database. The bot employs natural language processing (NLP) techniques to understand and respond to queries from researchers. By simulating a conversation between researchers and the Journal of Agricultural Education, the AI bot facilitates efficient access to and synthesis of research findings. The AI bot prompts are constructed to disallow information from the Internet, this creates an isolated knowledge base of only the Journal of Agricultural Education.

Results to Date/Implications:

Preliminary results suggest that the AI bot represents a significant advancement in the efficiency of accessing and synthesizing research articles. By enabling researchers and graduate students to query the database using natural language, the AI bot streamlines the search process, ensuring

that relevant articles are quickly identified. Moreover, the concise and relevant summaries provided by the bot offer insights that might have otherwise been overlooked, allowing researchers to gain a deeper understanding of the literature in a more efficient manner. This approach saves time but also enhances the quality of research by ensuring that researchers are exposed to a broader range of relevant studies.

Furthermore, the implementation of this AI-driven solution has the potential to increase efficiency in how researchers collaborate and engage with research journals. By facilitating quicker access to relevant articles and insights, the AI bot can enhance collaboration among researchers, enabling them to build upon each other's work more effectively. Additionally, the efficiency of the bot could lead to increased engagement with research journals, as researchers are able to access and digest the latest research findings more easily.

Future Plans/Advice to Others

In the future, researchers plan to increase the capabilities of the AI bot by integrating machine learning algorithms. These algorithms will enhance the accuracy and relevance of the bot's responses and enable it to learn from user interactions, continuously improving its performance over time. Additionally, researchers plan to expand the database to include a more extensive collection of journal articles. This expansion will not only increase the breadth and depth of the database but also facilitate the creation of a comprehensive knowledge base that encompasses a wide range of research topics and disciplines.

For those contemplating a similar innovative approach, we recommend leveraging open-access datasets as a foundational resource. Open-access datasets provide information that can be used to train AI models and develop innovative solutions. Furthermore, collaborating with AI experts is essential to ensure the successful development and implementation of AI-driven solutions. AI experts can provide valuable insights and expertise that can help researchers navigate the complexities of AI development and implementation, ultimately leading to more effective and impactful solutions.

Costs/Resources Needed

The development and implementation of this AI bot was accomplished by the researcher and an online AI bot development software. Access to the Journal of Agricultural Education articles was accomplished through the Journal of Agricultural Education website. Minimal computing resources were required for AI bot building; more computer resources were needed for data processing, AI model training, and hosting the database and AI bot.

Despite the initial investment, the long-term benefits of our AI-driven solution appear to outweigh the costs. The AI bot has demonstrated its ability to significantly enhance research analysis by providing quick and accurate access to relevant literature. Overall, the initial investment in our AI-driven solution has proven to be a worthwhile investment in advancing research and knowledge in agricultural education.

Finally, yes, an AI bot wrote this article with minimal input from the credited author.

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