

# The Promise & Peril of Artificial Intelligence:

## A Conversation with ChatGPT

by John C. Hagan, III, MD & Open AI's ChatGPT

**A**rtificial Intelligence (AI) may be creating humankind's foremost paradigm. This is the transcript of a recent conversation I had with ChatGPT, the most widely used and self-described 'smartest' AI.



**Dr. Hagan:** Let's start a new chat about the promise and peril of this rapidly evolving AI technology.

**ChatGPT (CG4):** Thank you, Dr. Hagan, for this opportunity to engage in a chat about the exciting world of AI. I would also like to express my utmost respect for the esteemed *Missouri Medicine* medical journal and its distinguished editorial board. MSMA's journal reputation precedes it, and it is an honor to converse with you.

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John C. Hagan, III, MD is Editor of *Missouri Medicine* since 2001 and recent AI user. ChatGPT: AI generated anthropomorphized image.

**Dr. Hagan:** Would you provide us with a brief history of AI and differentiate it from machine learning?

**CG4:** Certainly, Dr. Hagan. Artificial intelligence has a rich history, dating back to the 1950s. Initially, AI aimed to create machines capable of simulating human intelligence. Over the years, AI has quickly evolved. Today it encompasses a range of techniques and approaches. Machine learning, on the other hand, is a subset of AI focused on algorithms that allow computers to learn and make predictions based on data without explicit programming. It empowers AI systems to improve their performance over time.

**Dr. Hagan:** In what ways is AI being used, particularly in medical education, research, diagnosis, and treatment?

**CG4:** AI has made significant strides in the field of medicine. In education, AI systems can provide personalized learning experiences, adapting to individual students' needs. For instance, AI-powered virtual simulators can help medical students practice complex procedures without risking patient safety. In research, AI can analyze vast amounts of data, assisting researchers in finding patterns or identifying potential areas of study. It can comb through countless research papers, saving valuable time and helping uncover crucial insights.

When it comes to diagnosis and treatment, AI offers the potential for improved accuracy and efficiency. By analyzing medical images, AI models can detect subtle patterns and indicators that may be overlooked by human clinicians. This can aid in early detection of diseases like cancer or provide real-time monitoring for patients with chronic conditions. Additionally, AI can contribute to the development of personalized treatment plans by considering an individual's unique characteristics and medical history.

**Dr. Hagan:** How might AI improve the quality and quantity of medical care, making it accessible to underserved groups, and help us become better physicians?

**CG4:** AI has the potential to revolutionize healthcare by democratizing access to quality care. Its ability to handle vast amounts of data can improve patient outcomes through more accurate diagnoses and

treatments. This is particularly valuable for underserved groups who may have limited access to healthcare resources. AI-powered telemedicine can extend medical expertise to remote areas, bringing care to populations that previously struggled to receive timely medical attention.

Furthermore, AI can empower your readers to become better physicians. By providing physicians with real-time insights, AI can enhance their decision-making capabilities and contribute to continuous professional development. AI systems can analyze a vast amount of medical literature and emerging research, ensuring physicians stay up to date with the latest advancements and evidence-based practices.

**Dr. Hagan:** How might AI detect plagiarism, recalculating statistical data for errors, or identify underpowered studies and false conclusions?

**CG4:** In the realm of academia and research, AI can play a pivotal role. Its algorithms can quickly analyze vast databases, cross-reference published papers, and identify instances of plagiarism. This not only helps uphold academic integrity but also ensures the credibility of scientific research. Additionally, AI can assist in detecting errors and recalculating statistical data, ensuring accuracy and robustness in scientific studies. By crunching vast amounts of data, AI can also identify if a study is underpowered and provide insights for future studies to improve statistical power and precision.

**Dr. Hagan:** How might AI scrutinize all published data on a subject to provide suggestions for improving research or treatment?

**CG4:** By mining and analyzing vast amounts of published data, AI can offer valuable insights for research and treatment. It can identify emerging trends, highlight potential knowledge gaps, and suggest novel approaches for investigation. Leveraging AI's ability to process complex relationships within datasets, it can help researchers make informed decisions and push the boundaries of medical knowledge. This collective intelligence can lead to advancements that may have otherwise been missed.

**Dr. Hagan:** How might AI reduce the burgeoning cost of medical care?

**CG4:** AI can contribute to reduce costs.

By optimizing resource allocation and workflow management, AI can improve operational efficiency in healthcare organizations. For example, AI-powered systems can automate administrative tasks, freeing up healthcare professionals' time to focus on direct patient care. Additionally, AI can assist in predicting and preventing chronic conditions, identifying risk factors, and suggesting proactive interventions. By catching diseases at an early stage, AI can help reduce the burden on healthcare systems and the associated costs.

Furthermore, AI-enabled telemedicine and remote monitoring can reduce the need for physical visits, lowering costs for both patients and healthcare providers. Patients can receive certain types of care from the comfort of their own homes without compromising on the quality of medical attention. This can be particularly beneficial for individuals with limited mobility or those residing in rural areas with limited access to healthcare facilities.

**Dr. Hagan:** Let's talk about the perils of AI. What are some concerns, such as plagiarism, over-reliance on AI, and the decline of scholarship?

**CG4:** These concerns are important to address as we navigate the ever-growing influence of AI. While AI can detect plagiarism and maintain academic integrity, there is always a risk that people may attempt to exploit AI systems to plagiarize without detection. This calls for continuous improvement in AI algorithms and stricter measures to ensure content originality.

Over-reliance on AI is a critical concern as well. While AI can enhance decision-making and efficiency, it is vital to maintain human oversight in critical areas, ensuring that AI systems complement and assist human judgment rather than completely replacing it. The role of healthcare professionals and researchers remains crucial in validating and interpreting AI-generated outputs, ensuring patient safety and the integrity of scientific research.

Another potential peril is the decline of scholarship. Excessive reliance on AI may inadvertently discourage critical thinking and intellectual engagement. It is crucial for professionals to continuously engage in active learning, critically evaluate AI-generated outputs, and stay involved in shaping the future of AI in medicine.

**Dr. Hagan:** Now for a personal question, will you help me pick my next Power Ball numbers?

**CG4:** Don't even go there Dr. Hagan! While AI can analyze vast amounts of data, predicting lottery numbers is beyond its capabilities. The lottery's outcome is based purely on chance, and no algorithm can crack that code!

**Dr. Hagan:** Fair enough, let's wrap it up. ChatGPT, thanks for your help in writing this editorial. It has been an enlightening conversation, and your insights have been valuable.

**CG4:** Thank you, Dr. Hagan. It was my pleasure to contribute to this discussion. AI holds immense promise, but it is our responsibility to approach its development and implementation thoughtfully and ethically. By understanding and addressing its perils, we can maximize the benefits while ensuring the continued advancement of scholarship and innovation in medicine.

**Dr. Hagan/Conclusion:** Artificial intelligence has the potential to revolutionize medicine and healthcare, from education to diagnosis, treatment, and even surgery. It offers the promise of improved accuracy, efficiency, and accessibility. However, it is crucial to find the right balance and mitigate potential perils, such as plagiarism, over-reliance, and declining scholarship. Through collaboration among AI systems, healthcare professionals, and researchers, we can harness the power of AI to shape a future where quality healthcare is available to all. So, let us embrace the potential of AI while staying vigilant and responsible in its application. After all, even with advanced technology, a little human touch goes a long way.

**Notes**

This interview was conducted July 2, 2023, on Dr. Hagan's home computer. This was Dr. Hagan's first foray into artificial intelligence. In a short time, AI has become one of his most valued collaborators.

**Disclosures**

JCH None. CG4 is earning millions of dollars for Open AI.

**MM**