Can I Use AI for Second Medical Opinions? An Academic Perspective on Digital Health

Rasit Dinc

Rasit Dinc Digital Health & AI Research

Published: October 17, 2023 | Medical Imaging AI

DOI: 10.5281/zenodo.17997341

Abstract

Can I Use AI for Second Medical Opinions? An Academic Perspective on Digital Health The integration of Artificial Intelligence (AI) into clinical practi...

Can I Use AI for Second Medical Opinions? An Academic Perspective on Digital Health

The integration of Artificial Intelligence (AI) into clinical practice is rapidly transforming healthcare, with one of the most compelling applications being the use of AI systems to provide a **second medical opinion** [1]. Understanding the capabilities, limitations, and ethical landscape of AI in this critical domain is essential for professionals and the general public interested in digital health.

The Role of AI in Diagnostic Support

A second medical opinion is traditionally sought to confirm a diagnosis or explore alternative pathways. AI, particularly deep learning models trained on vast medical datasets, is now demonstrating performance comparable to human specialists in specific diagnostic tasks, such as interpreting medical images [2]. AI's primary value in a second opinion context is its capacity for **unbiased, high-speed analysis** of complex data. It acts as a powerful diagnostic support system (AI-DSS), flagging potential blind spots in human reasoning or identifying subtle patterns, a capability particularly valuable in fields like radiology and pathology [3].

Benefits and Opportunities

The potential benefits of leveraging AI for second opinions are substantial, focusing on improving diagnostic accuracy and efficiency:

| Benefit | Description | Academic Relevance | | :--- | :--- | :--- | | **Enhanced Accuracy** | AI models can process millions of data points to provide a statistically robust confirmation or contradiction of an initial diagnosis. | Reduces diagnostic error rates, a leading cause of medical malpractice. | |

| **Increased Accessibility** | AI-driven services can offer expert-level analysis in remote or underserved areas where specialist access is limited. | Promotes health equity and democratizes access to high-quality medical review. | | **Speed and Efficiency** | AI can deliver a comprehensive second review in minutes, significantly reducing the waiting time for patients facing critical health decisions. | Improves clinical workflow and accelerates the start of necessary treatment. | | **Bias Mitigation** | When trained on diverse, representative data, AI can offer an opinion free from the cognitive biases that can affect human judgment. | Supports objective clinical decision-making. |

The Critical Limitations and Risks

Despite the promise, the use of AI for second medical opinions is fraught with challenges that demand careful consideration. The academic literature highlights several key risks:

1. The Black Box Problem

Many advanced AI models operate as "black boxes," meaning their decision-making process is opaque and difficult to interpret [4]. In a medical context, this lack of **explainability (XAI)** is a major barrier, undermining trust and making it difficult to challenge or verify the conclusion.

2. Data Bias and Generalizability

AI systems are only as good as the data they are trained on. If the training data is not representative of the general population (e.g., lacking diversity), the AI may perform poorly or even dangerously when applied to a new patient group [5]. This raises serious concerns about **health equity** and the potential to exacerbate existing disparities.

3. Legal and Ethical Responsibility

A fundamental question remains: **Who is responsible when an AI-provided second opinion is wrong?** [6] Current legal frameworks are ill-equipped to assign liability. Furthermore, the patient's right to a second opinion on the AI's recommendation itself—a "right to a second opinion on AI"—is a growing ethical debate [7].

For more in-depth analysis on the complex interplay between emerging AI technologies, ethical governance, and the future of digital health, the resources at www.rasitdinc.com provide expert commentary and professional insight into these evolving challenges.

Conclusion: A Tool, Not a Replacement

The answer to "Can I use AI for second medical opinions?" is a qualified **yes**, but with a crucial caveat: AI must be viewed as a **sophisticated consultative tool** to augment, not replace, the human physician. AI-driven second opinions offer powerful data-driven validation. However, the final medical decision must remain with a qualified human clinician. The future of the second opinion is a **hybrid model**, integrating the speed and analytical power of AI with the judgment and ethical responsibility of the human expert.

**

References

[1] Dascalu, T. (2024). AI-initiated second opinions: a framework for advanced clinical decision support. BMC Medical Informatics and Decision Making*. [https://pmc.ncbi.nlm.nih.gov/articles/PMC11238353/] (https://pmc.ncbi.nlm.nih.gov/articles/PMC11238353/) [2] D'Adderio, L. (2025). Transforming diagnosis through artificial intelligence.* Nature Medicine*. [https://www.nature.com/articles/s41746-025-01460-1] (https://www.nature.com/articles/s41746-025-01460-1) [3] Kempt, H. (2022). Responsibility, second opinions and peer-disagreement: ethical and epistemological challenges of using AI in clinical diagnostic contexts.* Journal of Medical Ethics*. [https://jme.bmj.com/content/48/4/222] (https://jme.bmj.com/content/48/4/222) [4] Kompa, B. (2021). Communicating uncertainty in medical machine learning.* Nature Medicine*. [https://www.nature.com/articles/s41746-020-00367-3] (https://www.nature.com/articles/s41746-020-00367-3) [5] Dankwa-Mullan, I. (2024). Health Equity and Ethical Considerations in Using Artificial Intelligence in Public Health.* Preventing Chronic Disease*. [https://www.cdc.gov/pcd/issues/2024/24_0245.htm] (https://www.cdc.gov/pcd/issues/2024/24_0245.htm) [6] Naik, N. (2022). Legal and ethical consideration in artificial intelligence in healthcare: who takes responsibility?* Frontiers in Surgery*. [https://www.frontiersin.org/journals/surgery/articles/10.3389/fsurg.2022.862322/full] (https://www.frontiersin.org/journals/surgery/articles/10.3389/fsurg.2022.862322/full) [7] Ploug, T. (2023). The right to a second opinion on Artificial Intelligence supported diagnosis and treatment planning.* Bioethics*. [https://onlinelibrary.wiley.com/doi/10.1111/bioe.13124] (https://onlinelibrary.wiley.com/doi/10.1111/bioe.13124)
