**Title: AI-Powered Diagnostics in Healthcare: A Comparative Study**

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**Abstract**

Artificial intelligence (AI) has revolutionized medical diagnostics by enhancing accuracy and efficiency. This study evaluates the performance of AI-based diagnostic tools compared to traditional methods for early disease detection. A dataset of 10,000 patient records was analyzed using machine learning algorithms. Results show a 20% improvement in diagnostic accuracy and a 30% reduction in false positives. These findings suggest AI’s potential in clinical settings. Future research will focus on real-time AI implementation in hospitals.

**Introduction**

AI in healthcare has gained significant traction due to its ability to analyze vast amounts of medical data rapidly. This study aims to compare AI-driven diagnostic tools with conventional methods to assess their reliability and effectiveness.

**Materials and Methods**

A dataset containing 10,000 medical records was collected from three hospitals. Machine learning models such as neural networks and decision trees were applied to analyze patient data. Performance metrics like accuracy, precision, and recall were evaluated.

**Results and Discussion**

The AI model achieved an accuracy of 92%, outperforming traditional methods (72%). The reduction in false positives by 30% indicates improved diagnostic precision. However, challenges such as data bias and model interpretability remain concerns.

**Conclusion/Recommendation**

AI-based diagnostics can enhance early disease detection and patient outcomes. Future work should focus on integrating AI models with hospital systems to ensure real-time application and continuous learning.

**Key words:** AI, diagnostics, machine learning, healthcare, predictive analysis

**References**

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(Recent headshot photography)

**Biography (150 word limit)**

Jane Doe is a professor at the University of XYZ specializing in artificial intelligence and medical technology. She has published extensively in the field of AI-driven diagnostics and is currently leading a research team focused on AI applications in healthcare.

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