

The Role of AI in Early Detection of Genetic Disorders

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Abstract. Artificial Intelligence (AI) is rapidly transforming the landscape of genetic disorder diagnosis. This article delves into the application of AI technologies to identify genetic anomalies at an early stage, emphasizing the potential for improved accuracy and speed over traditional methods. Through machine learning algorithms and data integration, AI systems can analyze vast amounts of genetic data to predict and identify disorders more effectively. The study presents case analyses demonstrating AI's efficiency in clinical settings and discusses future implications for genetic medicine. Emphasizing ethical considerations and data security, this research charts a path toward enhanced genetic healthcare solutions.

Keywords: genetics, ai, detection, healthcare, data

Introduction: Genetic disorders pose significant health challenges, with early detection being crucial for effective management and treatment. Traditional diagnostic methods, while reliable, often require extensive time and resources, limiting their accessibility and efficiency. This study explores the transformative role of Artificial Intelligence (AI) in revolutionizing the early detection of genetic anomalies. By leveraging machine learning and big data analytics, AI-driven tools offer unprecedented accuracy and speed, enabling healthcare professionals to identify and respond to genetic disorders more swiftly. This research not only highlights the technological advancements but also addresses the ethical and data security concerns intrinsic to AI implementation in healthcare. As AI continues to advance, its integration into genetic diagnostics is poised to redefine medical paradigms.

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References

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