

**INTEGRATION OF MACHINE LEARNING ALGORITHMS IN TRADITIONAL
MEDICINE DIAGNOSTIC METHODS: A SYSTEMATIC REVIEW**

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Artificial Intelligence (AI) is transforming traditional Ayurveda healthcare systems with innovative solutions. Ayurveda, a personalized medical system, focuses on individualized diagnosis and treatment based on patient constitutions. A significant gap exists in analyzing AI applications in Ayurvedic diagnostics, particularly in enhancing accuracy while preserving traditional principles. This systematic review aims to evaluate the integration and effectiveness of AI applications in traditional Ayurveda diagnostic methods, focusing on pulse, facial, and tongue diagnosis. The primary research question addresses how effectively AI integrates with traditional methods while maintaining authentic principles. This study conducted a comprehensive systematic review of literature published between 2014 and 2025, utilizing Google Scholar as the search engine and ScienceDirect as the primary database, while following PRISMA-P 2020 guidelines. A total of 12 primary articles were selected based on criteria including published in English, full-text availability, and a focus on AI integration with diagnostics. The study examines the integration of Machine Learning, Computer Vision technologies and IoT systems which use interconnected devices to collect, transmit, and analyze data in real-time. In pulse diagnosis, Support Vector Machine (SVM) with parameter optimization achieved 92.1% accuracy in classifying disease patterns. Tongue examination benefited from image processing techniques analyzing features like color and texture, while facial analysis using computer vision enabled automated constitution assessment. Research findings show successful integration of IoT sensors, computer vision, and machine learning for pattern recognition. Despite promising results in diagnostic standardization, AI implementation in Ayurvedic practice remains limited. Future success depends on balancing technological advancement with traditional Ayurveda principles.

Keywords: Ayurveda diagnostics, Traditional medicine, AI-Enabled diagnostics, Healthcare technology, Machine learning