

Amalgamation of artificial intelligence with Sri Lankan Ayurveda medicine: A comprehensive review

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In the modern era, Artificial Intelligence (AI) plays a major role in society. AI is integrated into the general medicine discipline for patient diagnosis, disease prediction, clinical data, etc. This review aimed to identify the current state of the amalgamation of AI with Sri Lankan Ayurveda Medicine. This study was led with several sub-research objectives to identify challenges, gaps, and strengths of the process of amalgamating AI with Ayurveda Medicine. For the study, twenty-five (25) scholarly articles were screened and selected from IEEE Xplore, Springer, Taylor & Francis, Elsevier (ScienceDirect), and other journal repositories by applying inclusion and exclusion criteria with *Artificial Intelligence* *[^] *Ayurveda Medicine**; **lexicographically related terms* as the search string in the search strategy. The initial screening was conducted by considering the title, abstract, and keywords of the article. The papers were finally selected by considering the full content of the scholarly article. These papers were published from the year 2019 – 2025 and have made investigations on AI-oriented mobile applications to assist patients with the support of other web and mobile technologies, including *APIs (Application Programme Interfaces)* in the Ayurvedic domain. Further, scholars have conducted several experiments to design and develop patient diagnosis and related platforms by using several Machine Learning and Deep Learning algorithms from supervised, unsupervised, and reinforcement learning with *Support Vector Machines (SVM)*, *Logistic Regression*, *K-Nearest Neighbors (KNN)*, *XGBoost*, *Convolutional Neural Networks (CNNs)*, *Decision Trees and Random Forests*, etc. in the Ayurvedic medicine domain. Further, studies have demonstrated big data analysis with data mining techniques. Furthermore, there was a trend to lead with *Natural Language Processing (NLP)* for enabling Ayurvedic chatbots as a revolutionized concept in the modern era. According to the existing scholarly articles, there is a positive direction for amalgamating modern AI with Ayurveda Medicine for sustainable development with contributing to human beings' wellness. Having a higher number of data records and the need for high-performance computing power is a critical challenge in the studied area. The overall review process report was submitted to three senior academics to ensure the validity and accuracy of the study. Overall, AI can be integrated with Ayurvedic Medicine with vast data sets to personalize treatments, predict diseases, and improve accuracy via pattern recognition for making a bridge with modern technology. Meanwhile, maintaining data privacy with the most sensitive data is a higher challenge in the current cyber world and modernization. The conducted research study projected the main gap, existing limitations, and strengths of the blended area of Ayurveda Medicine and AI, ensuring alignment with the research objectives.

Keywords: *Artificial Intelligence, Ayurveda, Deep Learning, Machine Learning*