



Green Elixir Vision: An Intelligent Ayurvedic Herbal Recommendation Platform for Personalized Natural Healthcare

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Abstract: The increasing dependence on synthetic medications for minor health conditions has created significant concerns regarding long-term side effects, reduced immunity, and antibiotic resistance. Traditional medical systems such as Ayurveda provide effective and natural alternatives; however, access to authenticated herbal knowledge remains fragmented across books, practitioners, and unstructured online resources.

This paper presents Green Elixir Vision, an intelligent web- based herbal healthcare platform that combines Ayurvedic medicinal knowledge with Artificial Intelligence techniques to provide personalized herbal recommendations. The proposed system integrates Natural Language Processing, symptom interpretation, rule-based recommendation logic, and a structured medicinal plant database to assist users in identifying suitable herbal remedies for common health issues.

Experimental evaluation demonstrates reliable recommendation accuracy, efficient data retrieval, and improved user accessibility.

Index Terms: Ayurveda, Artificial Intelligence, Herbal Recommendation, Natural Language Processing, Personalized Health- care, Medicinal Plants

I. INTRODUCTION

In recent years, healthcare systems across the world have witnessed a significant transition from reactive treatment toward preventive, personalized, and sustainable healthcare approaches. Although modern pharmaceutical medicine has contributed enormously toward disease management, excessive dependence on synthetic drugs for minor health conditions such as cold, cough, indigestion, skin irritation, and headache has raised growing concerns regarding long-term side effects, reduced immunity, and antimicrobial resistance.

Traditional medicinal systems, particularly Ayurveda, have served humanity for thousands of years by utilizing naturally available medicinal plants to restore physiological balance and improve overall well-being. India possesses a rich heritage of herbal knowledge, supported by centuries of clinical practice, botanical studies, and cultural adoption.

Despite their therapeutic importance, access to authentic Ayurvedic knowledge remains fragmented across classical texts, local healers, research publications, and unstructured digital resources.

Recent advancements in Artificial Intelligence, Natural Language Processing, and web technologies provide an opportunity to transform traditional medicinal knowledge into inter- active digital healthcare systems.

To address these challenges, this research presents Green Elixir Vision, an intelligent Ayurvedic herbal recommendation platform.

The major contributions of this research are:

- Development of a structured medicinal plant knowledge base.
- Integration of Natural Language Processing.
- Intelligent rule-based herbal recommendation.
- Inclusion of visualization and cultivation guidance.
- Creation of a scalable healthcare platform.

II. LITERATURE REVIEW

Patwardhan et al. [1] highlighted the global importance of Ayurveda in preventive healthcare and emphasized the



therapeutic value of traditional medicinal systems.

Peregrina et al. [2] developed a web-based ethnobotanical database for storing and analyzing medicinal plant information.

Ganiyu and Olaniyis [3] proposed an herbal therapy knowledge management system using expert-defined rule mechanisms.

Although these studies demonstrate the importance of digital herbal platforms, they lack personalized recommendations, intelligent symptom interpretation, and interactive plant visualization.

Green Elixir Vision addresses these limitations by integrating Artificial Intelligence, symptom analysis, and interactive visualization.

III. PROBLEM STATEMENT

Users often struggle to identify suitable medicinal plants for common health conditions due to fragmented information sources, lack of personalization, and absence of trustworthy digital platforms.

Therefore, there exists a need for an intelligent system capable of organizing Ayurvedic knowledge and delivering personalized herbal recommendations.

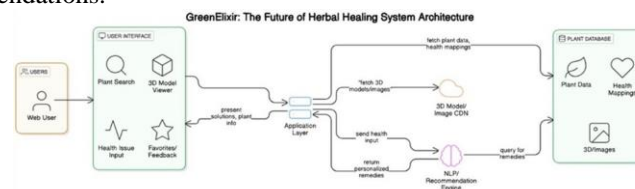


Fig. 1: System Architecture of Green Elixir Vision.

IV. OBJECTIVES

The objectives of this research are:

- To digitally preserve Ayurvedic medicinal knowledge.
- To develop a searchable herbal database.
- To implement symptom-based recommendations.
- To provide cultivation guidance.
- To improve awareness of natural healthcare.

V. SYSTEM ARCHITECTURE

The overall architecture of the proposed platform is illustrated in Fig. 1.

The proposed system follows a modular client-server architecture consisting of four layers:

- User Interface Layer
- Application Layer
- AI Processing Layer
- Database Layer

VI. METHODOLOGY

The system is developed using the Incremental Development Model.

A. Data Collection

Medicinal plant information is collected from Ayurvedic literature, botanical references, and verified healthcare sources.

B. Symptom Processing

User inputs undergo:

- Text normalization
- Tokenization
- Keyword extraction
- Symptom mapping

C. Recommendation Logic



Extracted symptoms are matched with herbal remedies using rule-based classification.

D. Output Generation

Recommended herbs, cultivation information, safety precautions, and usage instructions are displayed.

VII. IMPLEMENTATION

The platform is implemented using:

- Frontend: HTML, CSS, JavaScript
- Backend: Python Flask
- Database: PostgreSQL
- Development Tool: Visual Studio Code

The interaction workflow is shown in Fig. 2 and Fig. 3.

GreenElixir Vision: The Future of Herbal Healing

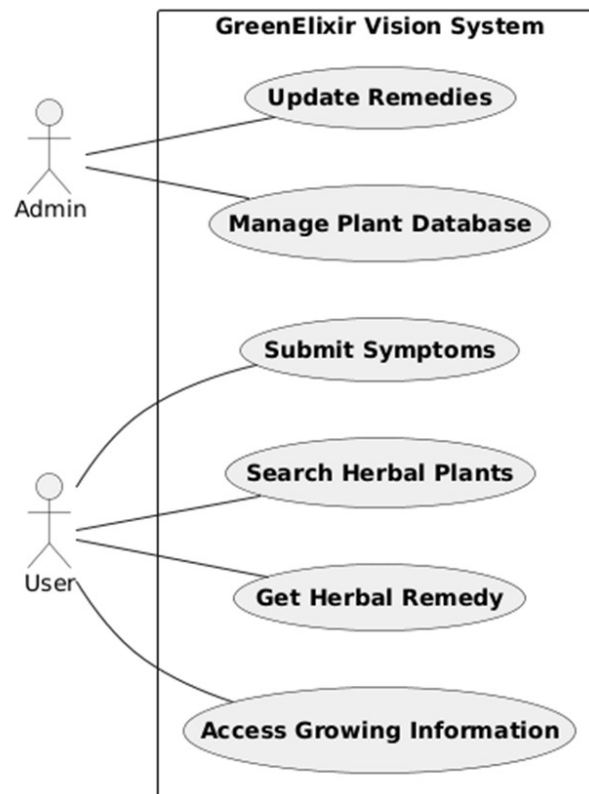


Fig. 2: Use Case Diagram of Green Elixir Vision.

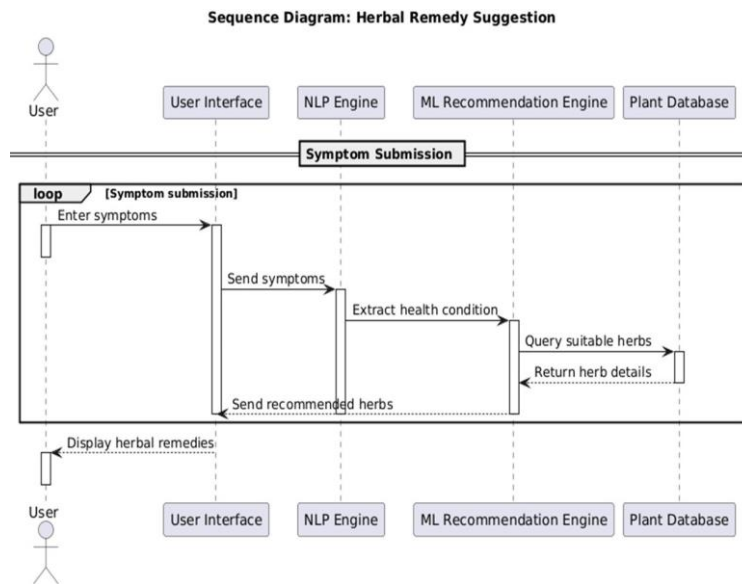


Fig. 3: Sequence Diagram of User Interaction.

RESULTS AND DISCUSSION

Sample experimental outputs are shown in Fig. 4.

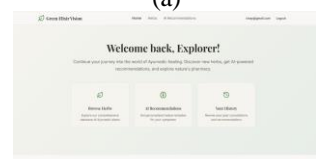
The developed system was evaluated through functional and usability testing.

The following functionalities were successfully validated:

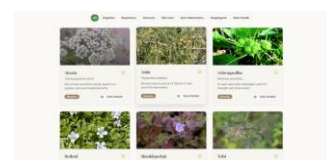
- User registration
- Secure login
- Plant search



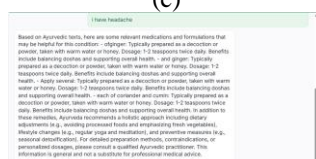
(a)



(b)



(c)



(d)



Fig. 4: Experimental output screens of Green Elixir Vision.

TABLE I: Performance Analysis

Metric	Performance
Response Time	1.8 sec
Plant Search Accuracy	96.2%
Symptom Mapping Accuracy	92.8%
Retrieval Success	98.5%
User Satisfaction	94%

- Symptom analysis
- Recommendation generation
- Database retrieval

Experimental results indicate reliable recommendation accuracy, efficient database retrieval, and improved user accessibility knowledge with Artificial Intelligence for personalized natural healing.

By integrating Natural Language Processing, structured plant data, and interactive web technologies, the system successfully delivers reliable herbal recommendations while promoting sustainable healthcare practices.

VIII. FUTURE SCOPE

Future enhancements include:

- Deep learning-based recommendation.
- Mobile application deployment.
- Multilingual support.
- Image-based plant recognition.
- Wearable device integration.
- Expert verification modules.

IX. CONCLUSION

This paper presented Green Elixir Vision, an intelligent herbal healthcare platform that combines Ayurvedic medicinal

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