

Ancestral Medicinal Plants Scanner App: Bridging Traditional Knowledge with Modern Technology

Bhargavi Simhadri

Sasi Institute of Technology & Engineering

Abstract- Traditional medicinal knowledge has been preserved for centuries but remains largely inaccessible to the broader public. This paper presents the development and implementation of a mobile application designed to identify and catalog ancestral medicinal plants. Using image recognition, augmented reality, and a curated database of plant properties, the app allows users to scan plants, obtain medicinal information, and learn about their traditional uses. This integration of technology with ancestral knowledge aims to promote cultural preservation, biodiversity awareness, and informed herbal practices.

1. INTRODUCTION

Ancestral medicinal knowledge forms the backbone of traditional healthcare practices across the world. In regions such as India, Africa, and the Amazon, communities rely on plant-based remedies for primary healthcare needs. However, rapid urbanization and generational shifts are leading to the erosion of this knowledge.

Mobile technology provides a unique opportunity to bridge this gap. By creating a digital platform that identifies plants and provides their medicinal properties, we can ensure accessibility, preservation, and safe usage of traditional remedies.

2. OBJECTIVES

1. Develop a mobile application capable of scanning and identifying medicinal plants.
2. Provide detailed information on the medicinal properties, uses, and precautions for each plant.
3. Preserve and disseminate ancestral knowledge in an accessible digital format.

3. METHODS

3.1 Data Collection

- Sources: Traditional medicine books, ethnobotanical surveys, and academic journals.

- Plant Database: Each entry includes scientific name, local name, description, medicinal uses, preparation methods, and images.

3.2 App Development

- Platform: Android/iOS
- Technologies Used:
 - Image recognition via TensorFlow
 - Database management using SQLite
 - User interface with React Native
- Functionality:
 - Scan plant leaves or flowers
 - Receive plant identification and medicinal properties
 - Save favorites for future reference

3.3 Validation

- Accuracy testing conducted using a dataset of 500 plant images.
- Cross-verified with ethnobotanical literature for authenticity.

4. RESULTS

- The app successfully identified 92% of plants in the test dataset.
- Users reported increased knowledge of medicinal plants and safer herbal practices.
- The database currently contains over 300 medicinal plant entries, including traditional uses and scientific references.

5. DISCUSSION

The integration of mobile technology with ancestral medicinal knowledge provides a sustainable method to preserve cultural heritage. Challenges include ensuring accuracy of plant identification, regular updates of the database, and educating users about proper medicinal use. Future improvements could

include community contributions, AR-guided field trips, and multilingual support to reach a wider audience.

6. CONCLUSION

The Ancestral Medicinal Plants Scanner App successfully merges traditional knowledge with modern technology, making ancestral plant remedies more accessible and preserving cultural heritage for future generations. This approach demonstrates the potential for digital tools to enhance ethnobotanical research and public education.

REFERENCES

- [1] Balick, M.J., & Cox, P.A. (2020). *Plants, People, and Culture: The Science of Ethnobotany*.
- [2] Jain, S.K. (2018). *Medicinal Plants of India: Their Ethnobotany and Pharmacology*.
- [3] TensorFlow. (2023). *Image Recognition Documentation*.
- [4] Ethnobotanical Survey Reports, Andhra Pradesh, India (2019–2023).