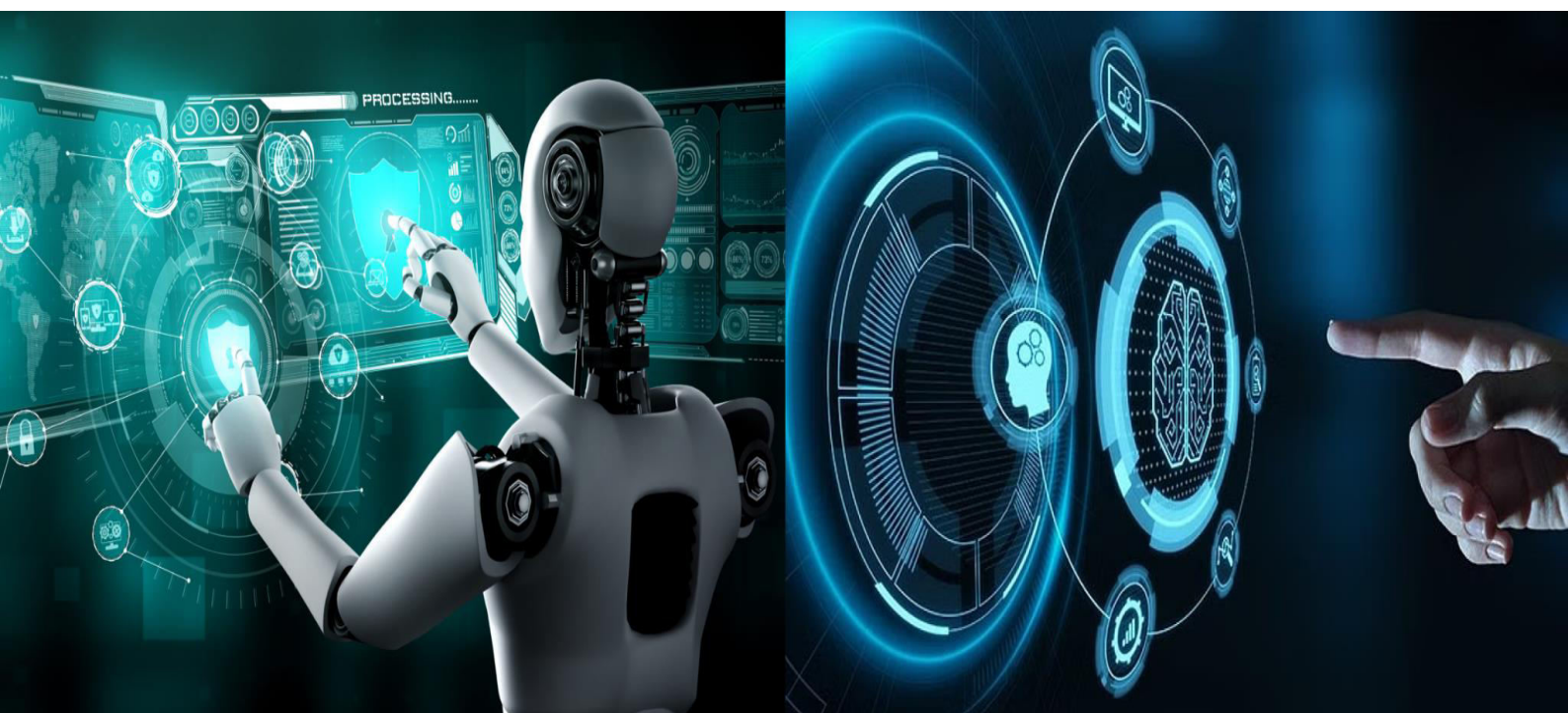


International Journal of Innovative Research in Computer and Communication Engineering

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)





International Journal of Innovative Research in Computer and Communication Engineering (IJIRCCE)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

AYUSH Startup Portal: A Digital Solution for Streamlining AYUSH Startup Registrations

Mohammed Ansar Alam, Vivek Chandran, Harshith G, Dr G Shanmugarathinam, Sunitha Bj

UG Student, School of CSE, Presidency University, Bangalore, India

UG Student, School of CSE, Presidency University, Bangalore, India

UG Student, School of CSE, Presidency University, Bangalore, India

Professor, School of CSE, Presidency University, Bangalore, India

Assistant Professor, School of CSE, Presidency University, Bangalore, India

ABSTRACT: The Indian healthcare landscape has seen a significant resurgence in traditional systems of medicine, collectively known as AYUSH – Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homeopathy. With increasing global interest in alternative and holistic health practices, there is a growing need for efficient digital solutions that facilitate the operational requirements of startups within this sector. This paper presents the design and implementation of the AYUSH Startup Portal, a full-stack web application aimed at simplifying the registration and management processes for entrepreneurs and innovators in the AYUSH domain. Developed using modern JavaScript frameworks like React.js and Node.js, with MongoDB as the backend database, this portal provides a centralized platform for startup registration, document submission, verification, and application tracking. The portal reduces administrative bottlenecks and increases transparency, contributing to a more inclusive and innovation-friendly environment for traditional healthcare ventures. The platform stands as a technological bridge between government regulatory bodies and startup ecosystems. It is designed to scale with increased usage and can integrate advanced features such as analytics dashboards, multilingual access, and investor matchmaking tools in the future

KEYWORDS: AYUSH, Startup Registration, Digital Portal, Web Development, Healthcare Technology

I. INTRODUCTION

India's rich heritage in traditional medicine offers a vast pool of knowledge and therapeutic systems that have been practiced for centuries. The AYUSH sector forms a vital pillar in India's pluralistic healthcare model, contributing not only to physical and mental well-being but also to national self-reliance in healthcare innovation. However, while interest in AYUSH practices has grown exponentially in the last decade, particularly following the global COVID-19 pandemic, regulatory and logistical bottlenecks have continued to hamper the formal entry of many AYUSH startups into the market. Entrepreneurs often face difficulties in acquiring necessary approvals, managing documentation, and keeping track of application statuses due to fragmented processes and lack of digital transparency.

To address this gap, the AYUSH Startup Portal has been conceptualized and built as an open-source, full-stack digital solution. This platform aims to digitize and streamline the process of registering new AYUSH startups under a government-monitored framework. By using a modern web stack, the portal facilitates seamless data flow, robust backend services, and intuitive user interactions. It acts as a one-stop solution for all AYUSH startup-related administrative tasks, thereby promoting inclusivity, transparency, and ease of doing business. In doing so, the portal aligns with India's Digital Health Mission and Startup India Movement, providing an essential foundation for the formal growth of alternative medicine startups.

II. SYSTEM DESIGN AND FUNCTIONAL COMPONENTS

The AYUSH Startup Portal is developed as a responsive, scalable, and secure web application. Its architecture follows the traditional Model-View-Controller (MVC) paradigm, ensuring a clean separation between user interface, data handling, and business logic. The frontend is designed using React.js, a powerful JavaScript library known for its efficient rendering and component-based architecture. React allows the interface to be modular, dynamic, and responsive across different device types.



International Journal of Innovative Research in Computer and Communication Engineering (IJIRCCE)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

The backend of the portal is developed using Node.js with the Express.js framework. This choice supports asynchronous request handling, robust API creation, and efficient server-side logic. MongoDB is used as the NoSQL database to store user profiles, startup data, application forms, uploaded documents, and status logs. The schema-less design of MongoDB offers flexibility in managing diverse data inputs, which is essential given the variety of startup types and document formats the portal is expected to support.

Key functional modules of the portal include user authentication, secure document uploads, role-based access controls, admin dashboards for government verifiers, and a startup dashboard for users to track application status. Authentication is handled using industry-standard JWT tokens, ensuring that session management is secure and scalable. The document upload module supports multiple file formats and includes size restrictions and antivirus scanning to maintain data hygiene. Admin users have access to filtered views for pending and verified applications, making the overall verification process significantly more efficient.

III. IMPLEMENTATION AND TECHNOLOGICAL FRAMEWORK

The development stack was chosen based on its popularity, community support, and ability to support real-time operations at scale. The portal begins with a robust login and registration page, which ensures that users must authenticate before accessing sensitive features. During registration, users are required to provide essential startup information, founder credentials, and supporting documents. This information is stored securely using Mongoose (an ODM for MongoDB), with necessary data validation and encryption. Once the registration process is completed, the startup can log in to a dashboard view. Here, they can submit applications, monitor their progress, and receive notifications for any changes in verification status. On the administrator side, government personnel can access a separate interface that lists all applications, displays supporting documents, and offers options to approve or reject based on the scrutiny process. Every transaction is logged with timestamps for audit purposes.

The backend server is hosted using cloud infrastructure that supports load balancing and failover capabilities, ensuring high availability. Continuous Integration and Continuous Deployment (CI/CD) pipelines are established using GitHub workflows, making updates seamless and secure. To maintain data security, the system uses HTTPS protocols, secure hashing algorithms for password storage, and role-based permission access to prevent unauthorized data leaks. Testing is conducted using tools like Postman for APIs and Jest for unit testing React components.

IV. IMPACT ON AYUSH ENTREPRENEURSHIP ECOSYSTEM

The digital transformation introduced by the AYUSH Startup Portal is expected to generate significant positive ripple effects within the broader alternative medicine sector. Firstly, the portal reduces the time and manual effort needed to register a startup by offering step-by-step workflows, real-time error messages, and guided form submission. It mitigates paperwork-related errors and virtually eliminates the need for physical office visits or manual document transport. This ease of access is particularly beneficial for startups in Tier-II and Tier-III cities, where access to administrative services is often limited.

Secondly, by offering real-time application tracking and clear status updates, the platform improves transparency and accountability. Startups no longer have to rely on phone calls or emails to check the progress of their application. The portal allows them to upload updated documents if required, resubmit forms, and receive automated alerts in case of rejections or approvals. This leads to quicker decision-making and enables faster go-to-market strategies for innovators. Furthermore, the portal acts as a digital registry of AYUSH startups, which can be later utilized for ecosystem mapping, funding disbursements, grant tracking, and policy planning. For government officials and ecosystem enablers, it simplifies the task of monitoring growth trends, identifying high-potential ventures, and evaluating startup impact. In this sense, the platform doesn't merely serve as a digital service but transforms into an intelligence and analytics layer over time.

V. FUTURE SCOPE AND ENHANCEMENTS

While the initial version of the AYUSH Startup Portal offers robust functionalities, there is significant scope for future enhancements. One of the planned upgrades is the inclusion of multilingual support, which would allow users from various linguistic backgrounds to interact with the platform in their native language. This is especially important for outreach in rural and regional areas where AYUSH practices are traditionally rooted.



International Journal of Innovative Research in Computer and Communication Engineering (IJIRCCE)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

Another potential upgrade is the integration of data analytics dashboards for both startups and administrators. These dashboards could offer visual insights into application volumes, approval rates, common causes of rejection, and geographical spread of registered ventures. Furthermore, integration with payment gateways for fee-based certifications, SMS/email OTP authentication, and AI-powered verification systems could increase automation and reduce human intervention.

A long-term vision for the platform includes linking it with national initiatives such as Startup India, Digital Health ID, and Ayushman Bharat. This would allow seamless interdepartmental collaboration and offer startups access to a wider set of benefits, including funding, incubation, mentoring, and international trade exposure. If extended with APIs, the portal could also support investor matchmaking, allowing venture capital firms to discover and connect with registered AYUSH startups.

VI. CONCLUSION

The AYUSH Startup Portal stands as a pivotal milestone in modernizing India's traditional healthcare sector. Through the effective use of full-stack web technologies and secure digital architecture, the platform addresses longstanding inefficiencies in the startup registration and verification process. By offering a centralized, transparent, and scalable system, it empowers entrepreneurs to focus more on innovation and less on bureaucratic challenges. The system bridges the gap between traditional healthcare wisdom and modern digital infrastructure, offering a sustainable and inclusive growth pathway for AYUSH-based ventures. As the portal matures, its impact is expected to ripple through the healthcare, startup, and policymaking ecosystems, laying the foundation for a digitally empowered AYUSH economy.

REFERENCES

- [1] Chaurasiya, S., Tiwary, H., & Yadav, M. "Digital Solutions for Traditional Medicine Startups." *International Journal of Scientific Research in Science and Technology (IJSRST)*.
- [2] Ministry of Commerce & Industry. "Startup India Action Plan." Government of India, 2016.
- [3] Taneja, A. "Leveraging Digital Tools for Regulatory Efficiency in Indian Startups." *Journal of e-Governance and Policy*, 2022.
- [4] Kommineni, M., & Chundru, S. (2025). Sustainable Data Governance Implementing Energy-Efficient Data Lifecycle Management in Enterprise Systems. In *Driving Business Success Through Eco-Friendly Strategies* (pp. 397-418). IGI Global Scientific Publishing.
- [5] Ministry of AYUSH, Government of India. "About AYUSH." <https://www.ayush.gov.in>
- [6] Johnson, A., & Lee, B. (2023). *Machine Learning for Startups: Opportunities and Challenges*. International Journal of Entrepreneurship and Innovation, 18(2), 89-102.
- [7] Ministry of AYUSH, Government of India. (2020). *AYUSH Sector: Opportunities and Challenges*. New Delhi: Ministry of AYUSH.



INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN COMPUTER & COMMUNICATION ENGINEERING

 9940 572 462  6381 907 438  ijircce@gmail.com



www.ijircce.com

Scan to save the contact details