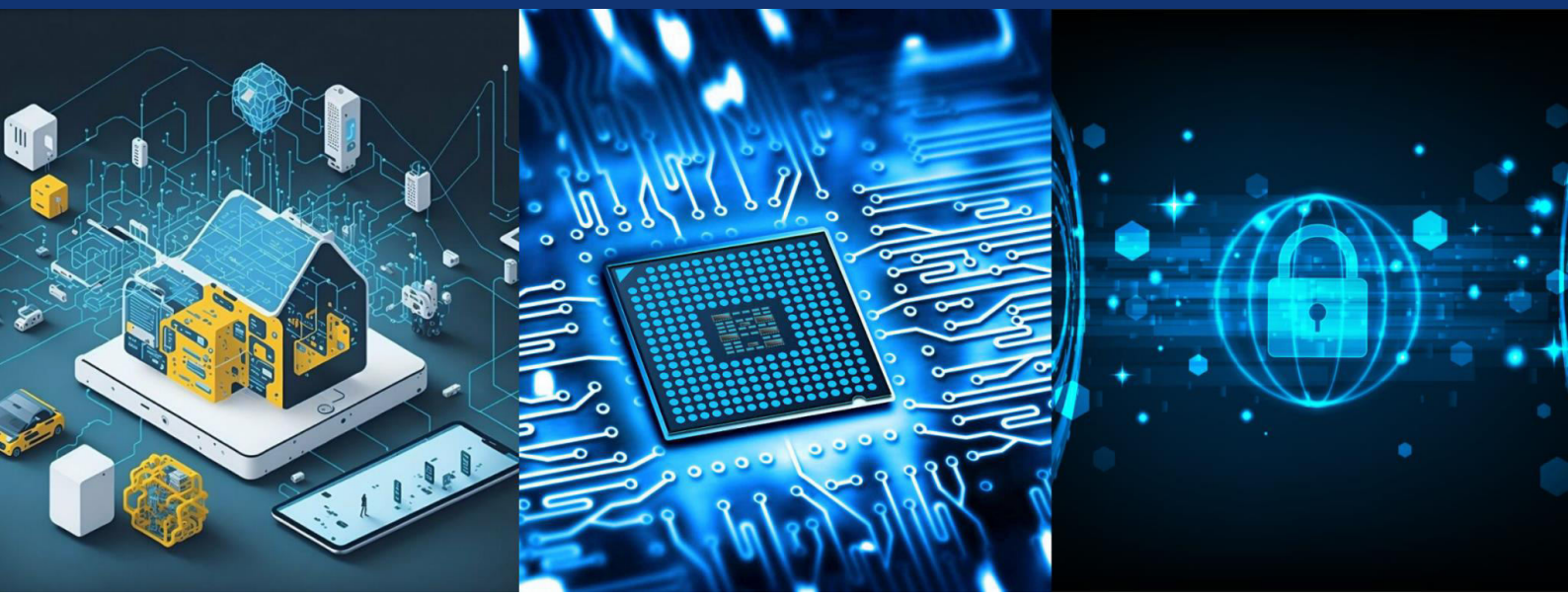
IJIRCCE

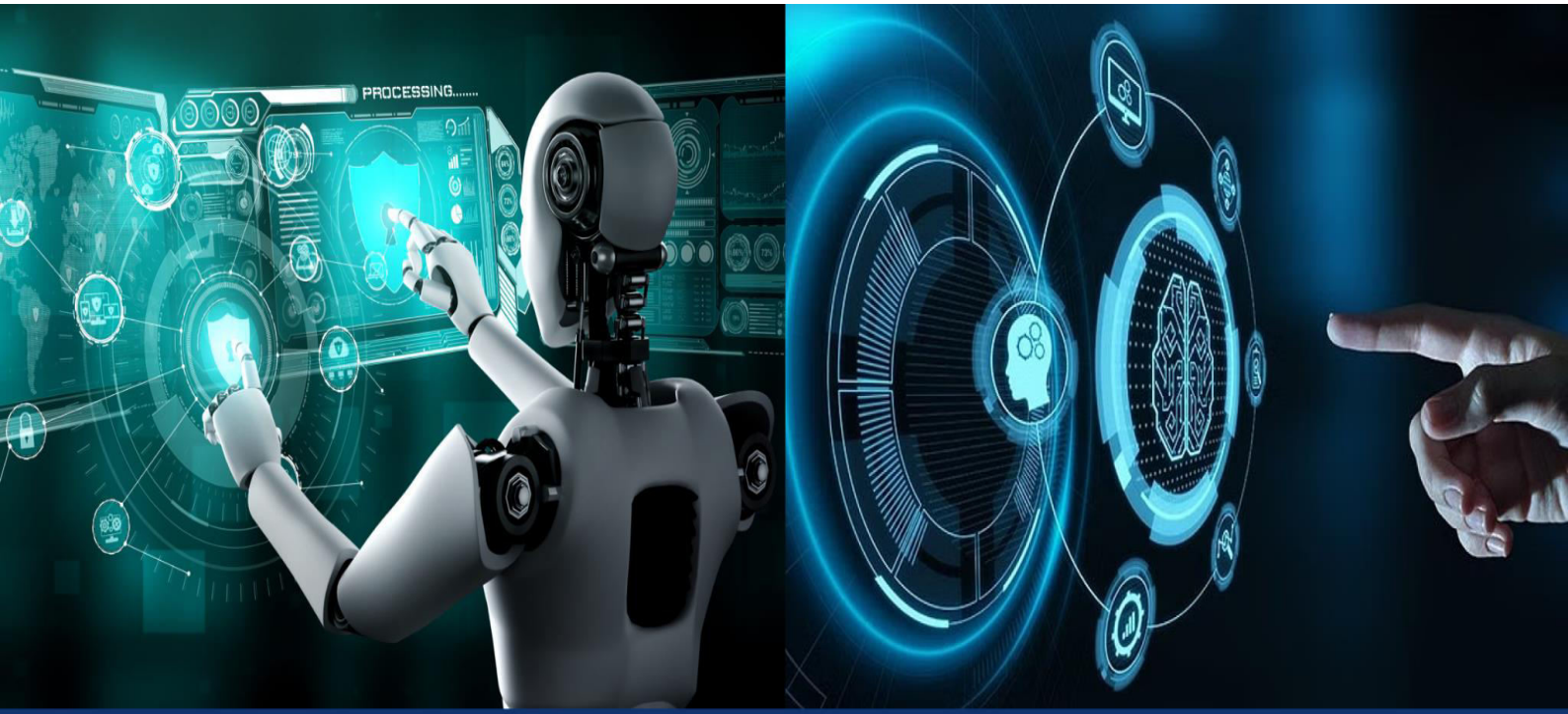
ISSN(O): 2320-9801

ISSN(P): 2320-9798



International Journal of Innovative Research in Computer and Communication Engineering

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



Impact Factor: 8.625

Volume 13, Issue 1, January 2025

© 2025 IJIRCCE | Volume 13, Issue 1, January 2025| DOI: 10.15680/IJIRCCE.2025.1301115

www.ijircce.com | e-ISSN: 2320-9801, p-ISSN: 2320-9798| Impact Factor: 8.625| ESTD Year: 2013|

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

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

Craftcove: A Smart Communication Hub for Empowering Artisans and Reviving Handicrafts

Shaik Thaheer[1], Shaik Mohammad Kaif[2], Keerthi Kumar[3], Abdul Manan[4], Mr. Shankar J[5]

Student, Dept. of CSE (DevOps), Presidency University, Bangalore, India[1,2,3,4]

Assistant Professor, Dept. of CSE, Presidency University, Bangalore, India[5]

ABSTRACT: The Indian textiles and handicrafts sector is a cornerstone of the rural economy, reflecting the unparalleled craftsmanship of local artisans. However, despite their brilliance, many artisans face challenges in gaining recognition and market access. This project seeks to address these challenges by developing an interactive web platform that empowers artisans to showcase their creations, connect with customers, and foster collaboration within their community.

The platform enables artisans to register accounts, upload product details (including images, prices, and specifications), and access personalized dashboards with performance metrics such as total sales, rank, earnings, and product views. A unique feature allows artisans to organize and participate in self-created events, promoting mutual collaboration through shared interests. To ensure authenticity, new users can initially sell up to five articles via Cash On Delivery (COD) before gaining access to online payment options upon verification.

For consumers, the platform offers a curated collection of "Varanasi Special" products arranged by popularity, enhancing the shopping experience. Artisans also benefit from dashboards showcasing government exhibitions and events to further boost visibility. To encourage participation and excellence, the platform introduces an "Artisan of the Month" program, recognizing top-performing artisans based on sales and customer ratings.

KEYWORDS: Artisans, Cultural Heritage Handicrafts ,Market Access,Digital Literacy

I. INTRODUCTION

The "Smart Communication" project aims to leverage modern technology to address the challenges faced by rural artisans in India. This initiative is rooted in the belief that artisans are not just creators of beautiful crafts but also vital contributors to the cultural and economic landscape of the nation. However, despite their remarkable skills and creativity, many of these artisans find it challenging to gain visibility and access to the broader marketplace. This project seeks to empower artisans by providing them with a platform that bridges the gap between their exceptional craft and the global marketplace.

By creating a digital marketplace, artisans can showcase their products to a wider audience, monitor their performance through various metrics, and collaborate with fellow artisans to foster growth and innovation within their communities. This platform is designed to be user-friendly and accessible, enabling artisans to easily upload their products, manage their profiles, and engage with potential customers.

Additionally, the platform will incorporate essential features such as performance tracking, sales data analysis, and collaboration tools that encourage artisans to connect and support one another. By fostering a sense of community among artisans, the project aims to create an ecosystem where knowledge- sharing and mutual support lead to enhanced skills and business acumen.

© 2025 IJIRCCE | Volume 13, Issue 1, January 2025| DOI: 10.15680/IJIRCCE.2025.1301115

www.ijircce.com | e-ISSN: 2320-9801, p-ISSN: 2320-9798| Impact Factor: 8.625| ESTD Year: 2013|

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

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

II. RELATED WORK

Social media has become a powerful tool for artisans to promote their work and
connect with a wider audience. Platforms like Instagram, Facebook, and Pinterest allow artisans to share their crafts visually, engage with potential customers, and build brand identity.
Key advantages include:

Direct Interaction: Artisans can communicate directly with their audience, receiving immediate feedback and fostering relationships.

Cost-Effectiveness: Social media is often free or low-cost, making it accessible for artisans with limited budgets.

Creative Marketing Opportunities: Visual storytelling can captivate audiences and highlight the craftsmanship behind the products.
However, the reliance on social media also presents challenges. The fast-paced nature of these platforms can make it difficult for artisans to maintain consistent engagement. Additionally, algorithms may limit the reach of posts, making it hard for artisans to gain visibility without paid promotions. Various government programs aim to support local artisans, focusing on skill development, financial aid, and market access. Initiatives like the “One District, One Product” scheme in India aim to promote traditional crafts by providing artisans with training and assistance in marketing their products.

These initiatives often include:
Skill Development Workshops: Training programs that enhance artisans' skills, enabling them to produce higher-quality products.

Financial Assistance: Grants or low-interest loans to help artisans start or expand their businesses.

Exhibition Opportunities: Government-organized fairs and exhibitions that provide artisans with a platform to showcase their work to a larger audience. Despite these programs, challenges remain. Artisans may face bureaucratic hurdles, and the reach of government initiatives can be limited, often not extending to the most marginalized or remote communities.

III. PROPOSED METHODALOGY

Design Considerations: The Proposed Methodology section describes the process of designing, developing, and implementing the "Smart Communication" platform, which aims to empower rural artisans by enhancing their visibility and providing them with tools for collaboration, sales tracking, and self-promotion. This methodology encompasses the system architecture, platform workflow, technologies used, and features integrated into the platform to achieve these goals.

IV. SYSTEM ARCHITECTURE

The system architecture outlines the foundational structure of the "Smart Communication" platform and consists of several key components that work together to provide a seamless experience for artisans and customers alike. The architecture can be divided into the following layers:

Presentation Layer (Frontend):

- This layer is responsible for the user interface (UI) that artisans and customers interact with. It is designed to be intuitive and easy to navigate, ensuring that users, regardless of their technical skills, can effectively engage with the platform.
- Technologies used: HTML, CSS, JavaScript, and frameworks such as React or Vue.js for building a responsive and dynamic user interface.

© 2025 IJIRCCE | Volume 13, Issue 1, January 2025| DOI: 10.15680/IJIRCCE.2025.1301115

www.ijircce.com | e-ISSN: 2320-9801, p-ISSN: 2320-9798| Impact Factor: 8.625| ESTD Year: 2013|

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

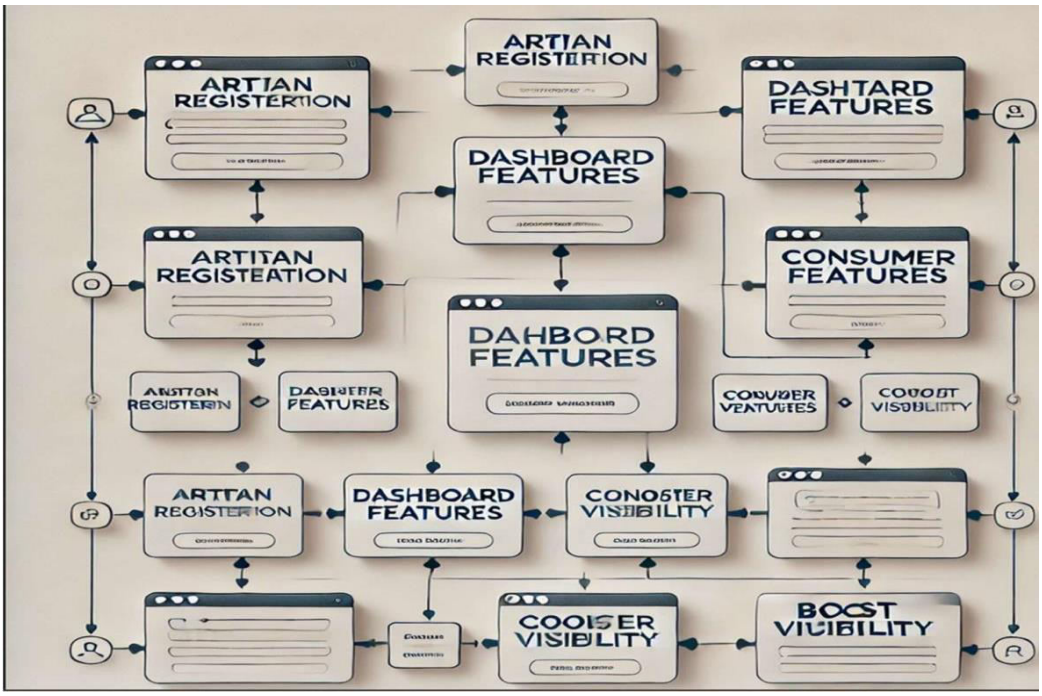
(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

Business Logic Layer (Backend):
The backend handles the core functionality of the platform, processing requests from the frontend, managing data, and implementing business rules.
It includes APIs for user authentication, product management, order processing, and analytics. o Technologies used: Node.js or Python with frameworks like Express.js or Django to create robust server-side applications.

Database Layer:
This layer manages the storage and retrieval of data related to artisans, products, transactions, and user interactions. It ensures data integrity and security.
A relational database management system (RDBMS) such as MySQL or PostgreSQL will be utilized to store structured data, allowing for efficient querying and reporting.

Integration Layer:
The platform will integrate third-party services such as payment gateways, social media platforms, and analytics tools to enhance functionality.
This integration allows for secure payment processing, easy sharing of products on social media, and collection of valuable insights into user behavior and sales performance.

Collaboration Tools:
Built-in tools for communication and collaboration among artisans will be included, allowing users to share ideas, showcase joint projects, and provide mutual support within the community.



V. SIMULATION RESULTS

The The "Smart Communication" project is meticulously designed to facilitate seamless interactions between rural artisans and their customers. By incorporating robust features that allow artisans to showcase their products, track performance, collaborate with peers, and conduct secure transactions, the system aims to empower artisans in the digital marketplace. Below, we outline the key components of the system, focusing on both the frontend and backend technologies that will bring this vision to life.

www.ijircce.com | e-ISSN: 2320-9801, p-ISSN: 2320-9798| Impact Factor: 8.625| ESTD Year: 2013|

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

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

Key Components

Frontend:

Technologies: The frontend of the system will be developed using ReactJS, a popular JavaScript library known for creating dynamic user interfaces. Its component-based architecture allows for efficient updates and rendering, making it an ideal choice for our platform. O

Features:

▪ **Responsive Design:** The platform will be designed with responsive principles, ensuring accessibility across a variety of devices, such as smartphones, tablets, and desktops. This adaptability will enhance the user experience, allowing artisans and customers to navigate the platform seamlessly, regardless of the device they are using.

▪ **User Dashboards:** Specific dashboards will be created for both artisans and customers. The artisan dashboard will include features like product management, sales analytics, and collaboration tools, while the customer dashboard will focus on product discovery, order tracking, and user reviews. This tailored approach will ensure that each user group has access to the tools and information that are most relevant to them.

Backend:

Technologies: The backend will utilize Spring Boot, a powerful framework for building RESTful APIs. This choice allows for the development of a robust and scalable backend that can efficiently handle multiple requests from users.

Features:

▪ **RESTful API Design:** The backend will employ a RESTful
architectural style, enabling smooth communication between the frontend and backend. This will facilitate actions such as product uploads, performance tracking, and user authentication.

▪ **Database Integration:** A relational database (e.g., PostgreSQL or MySQL) will be integrated to manage artisan and product data effectively. This database will store vital information, such as user profiles, product details, sales history, and customer reviews, ensuring that all data is organized and easily retrievable.

▪ **User Authentication and Authorization:** The system will implement secure user authentication and authorization protocols, enabling artisans and customers to create accounts, log in, and manage their profiles safely. This security feature is crucial for building trust among users, as it protects sensitive information during transactions and interactions.

Features and Functionalities:

Product Showcasing: Artisans will have the capability to showcase their products with high-quality images, detailed descriptions, and pricing information. This feature will include customizable templates to enhance the visual appeal of the products listed.

Performance Tracking: The backend will include analytics tools that provide artisans with insights into their sales performance, customer interactions, and product popularity. This data will help artisans make informed decisions regarding inventory management, marketing strategies, and product development.

Collaboration Tools: To foster collaboration among artisans, the platform will feature forums and discussion boards where users can share ideas, seek advice, and collaborate on projects. This community-driven approach will encourage the sharing of knowledge and skills among artisans. o **Secure Payment Transactions:** The system will incorporate secure payment gateways to facilitate safe and seamless transactions between artisans and customers. This feature will ensure that all financial exchanges are encrypted, protecting users from fraud and unauthorized access.

Deployment:

Cloud-Based Hosting: The application will be hosted on a cloud
platform (e.g., AWS, Azure, or Google Cloud) to ensure scalability and reliability. This setup will allow the system to handle varying loads, accommodating fluctuations in user traffic without compromising performance.

Continuous Integration/Continuous Deployment (CI/CD): A CI/CD pipeline will be established to automate testing and deployment processes. This will enable the development team to push updates and new features quickly while maintaining high quality and minimizing downtime.

www.ijircce.com | e-ISSN: 2320-9801, p-ISSN: 2320-9798| Impact Factor: 8.625| ESTD Year: 2013|

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

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

User Support and Feedback:

Help Center: A dedicated help center will be available to provide users with support and resources. This will include FAQs, tutorials, and contact options for customer service representatives who can assist with any issues or inquiries.
Feedback Mechanism: The platform will include features that allow users to provide feedback on their experiences. This feedback will be invaluable for continuous improvement, helping the development team understand user needs and make necessary adjustments to enhance the platform.

VI. CONCLUSION AND FUTURE WORK

Project "Improving Reusability of Electronic Components" demonstrated the potential of using machine learning and user-friendly interfaces to address the growing challenge in managing electronic waste. The system developed is highly scalable and efficient for classifying electronic components and estimating their reusability based on functionality.
By using a deep learning model trained on a dataset of 21,000+ images, the system achieved high accuracy in identifying electronic components and classified them into three main conditions:

- Fully Functioning: Ready for direct reuse or donation.
- Partially Functioning: Suitable for repair or repurposing.
- Non-Functioning: Requires recycling or proper disposal.

The Streamlit-based web application ensures accessibility by allowing easy image uploads and provides actionable insights based on the component's condition. The recommendations of repair, reuse, or recycling are in harmony with the concept of a circular economy and would help reduce e-waste's environmental impact.
This project fills the gap between technology and sustainability by offering practical tools for individuals, recyclers, and organizations to make the right decisions concerning electronic waste.

REFERENCES

1. On E-Waste and Sustainability

- Forti, V., Balde, C.P., Kuehr, R., & Bel, G. (2020). Global E-Waste Monitor 2020. International Telecommunication Union (ITU) UNU UNU International Institute for Global Health (UNU-IIGH) 317Understanding and managing the impact of plastic pollution 317International Solid Waste Association (ISWA)

➢ Such statistics highlight challenges in global e-waste and recycling practices:

- European Commission. (2019). Circular Economy Action Plan.It includes discussions on the circular economy and ways to try to prolong a product's life.

2. Machine Learning and Image Classification

- LeCun, Y., Bengio, Y., & Hinton, G. (2015). Deep Learning. Nature, 521(7553), 436-444. Covers the basics of deep learning and how it is used for image classification.
- Simonyan, K., & Zisserman, A. (2014). ImageNet Classification with Deep Convolutional Neural Networks. arXiv preprint arXiv:1409.1556.
- Explain how CNN architectures such as VGGNet can be used for image classification Jain, A., & Gupta, R. (2021). AI In E-Waste Management: Taking A Step Towards Sustainability Sustainable Computing: Informatics and Systems, 30, 100526.

3. Streamlit and Application Development

- Streamlit Documentation. (n.d.). Streamlit DocumentationThe fastest way to build data apps.
- Streamlit is open-source software, so we love sharing ideas with the community.

4. Environmental Imapct and Recycling

- Kang, H.-Y., & Schoenung, J.M. (2005). Review of U.S. Infrastructure and Technology Options for Electronic Waste Recycling. Resources, Conservation and Recycling, 45(4): 368-400.

www.ijircce.com | e-ISSN: 2320-9801, p-ISSN: 2320-9798| Impact Factor: 8.625| ESTD Year: 2013|

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

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

➢ Analyzes environmental implications of e- waste recycling technology tasks.

- Howard, A.G., et al. (2017). MobileNets: Efficient Convolutional Neural Networks for Mobile Vision Applications [1704.04861] (arXiv)

5. Reusability and E- Waste Management

- Widmer, R., Oswald-Krapf, H., Sinha- Khetriwal, D., Schnellmann, M., & Böni, H. (2005). Electric Waste: A Global Perspective International Journal of Impact Assessment & Project Appraisal, 21(4), 232-241.
An overview of e-waste and potential repair and recycling opportunities.

INTERNATIONAL STANDARD SERIAL NUMBER INDIA

INNO SPACE SJIF Scientific Journal Impact Factor

doi crossref

निस्केयर NISCAIR

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