

Visualising and Promoting Applications of Crafts of the Himalayan State of Uttarakhand (India) in Interior Architecture through a Mobile App

Category: App Award

Smriti SARASWAT_ Assistant Professor, Department of Design, Indian Institute of Technology Roorkee, Uttarakhand, India

Sakshi PANDEY_ Master of Design, Indian Institute of Technology Roorkee, Uttarakhand, India

Rajeev MEENA_ Graphic Designer and Founder TA2 Design, India

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Introduction

New Technologies are a part of our daily life and emerging to be as a solution for reviving and restoring information. There are several ways that cultural heritage applications can be used as a source of interest, information, and education, ranging from the virtual reconstruction of 3D cultural or craft assets to augmented reality, showing and expanding content through an interactive media. This study presents an innovative technological solution to the applied to the promotion of Cultural heritage through a Mobile App.

The mobile application "Uttarkala" is proposed as a one-stop solution for all the information on crafts of Uttarakhand, promoting them through visualization and experiencing them through personalisation and customisation. The idea is to promote and revive crafts; create an ecosystem involving different stakeholders; achieve designs which demonstrate the economic potential of these crafts by linking them to space-making; and, develop a digital platform which showcases the crafts and cultural heritage as popular and not elite, eventually leading to outreach and sales. This application shall expand later, and act as an ever-growing digital encyclopaedia on crafts of India and ecommerce platform to visualise crafts in interior spaces and make purchases.

Background

The cultural heritage of Uttarakhand, India is wide that it is difficult to find information, product and events about the craft and culture. Uttarakhand is a Himalayan state, which is historically rich; culturally vibrant; popular in terms of tourism; and, has a vast repository of arts, crafts and indigenous architectural styles. It is a cultural hub, and is home to unique and exquisite crafts such as *aepan*

(ceremonial floor and wall paintings), *tamta* (copper craft), *ringaal kaam* (bamboo craft), *likhai kaam* (wooden carvings), stone craft, wood craft, natural fibres, textiles and candle making. This state has been identified as an area of priority and intervention under several current initiatives taken up by the government, be it the smart city project, tourism development or cultural dissemination. Therefore, it is selected in the initial phase of this initiative. Most of the crafts are seen in the spaces inhabited by the users, but they are rarely discussed in terms of space-making potential, due to disciplinarian boundaries. Many of these crafts are either languishing or have a low earning potential. They can be promoted and revived using digital tools, technologies and applications.

Description of the Uttarkala App

In this context, we have developed **Uttrakala App**, an innovative mobile app which highlights the importance of craft and culture of Uttarakhand. People will not only know about the crafts but also will be able to customize and visualize spaces for better decision making and personalization. Key features of this mobile application are dissemination of crafts and cultural heritage of Uttarakhand; visualization of interior spaces; augmented reality; customization and personalization; 3D visualization; informative and interactive interface.

The name “Uttrakala” is formed by combining Uttarakhand (a Himalayan state in India) and *Kala* (Craft) which showcases the crafts and culture of Uttarakhand (Fig. 1).



Fig. 1. Logo of the App (Source: Authors)

Prototyping Uttrakala App: Unique Features

1. As a widely accessible tool for promoting and spreading the historical, aesthetic, ethnographic, scientific, and technical values of cultural assets, Uttrakala provides a diverse range of possibilities.
2. Uttrakala’s specific purpose is to disseminate the information which leads to visualisation and personalisation of crafts assets according to the user. While prototyping, the card sorting method is adopted to classify widgets and segregate the components that the user might

require in the digital application. The information architecture for the mobile application is designed and developed, and after that wireframes are created (Fig. 2).

3. The user for this App is consumers who are living across India. However, there are varied stakeholders involved in the app like Designers, Artisans, Working professionals and Families.
4. The main navigation in the app is Home, Crafts, Visualize and Profile present in the bottom navigation (Fig. 3).
5. Augmented Reality - User can explore and visualise the interior and exterior spaces by placing the product in spaces and have a clear image of the overall combination. By integrating the digital technology with crafts, there are numerous possibilities of visualisation (Fig. 4 and Fig. 5).
6. Personalisation - One of the features of the App which lets the user to personally edit (Click your room) and place the assets on the image clicked by him/her or from the provided templates that goes by the name "Design your space". Here, the user has all the control to change, add or make any changes to the space followed by saving, sharing or deleting the file created by the user. Users can also refer to the curated ideas which are already present in the app for inspiration and combinations.
7. In the App, the user has flexibility to switch from Augmented reality mode to Editable mode for ease of use.
8. There is a separate section for Crafts (bottom navigation) where the user can know everything about the craft, process, ecosystem, craftsperson, workshops or events about the craft owing to the dissemination of the craft in a more holistic manner (Fig. 6).
9. In the Home page, there are numerous interactive elements like, 3D assets, touch the area, touch the map and know about the place.

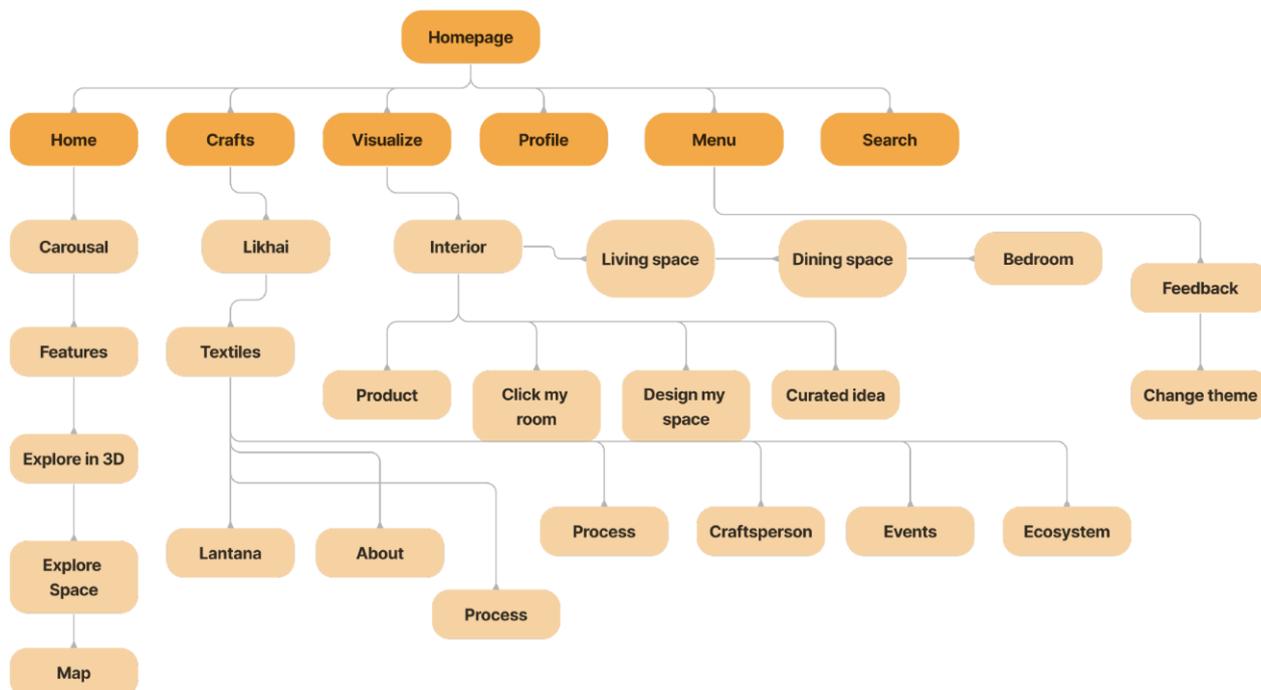
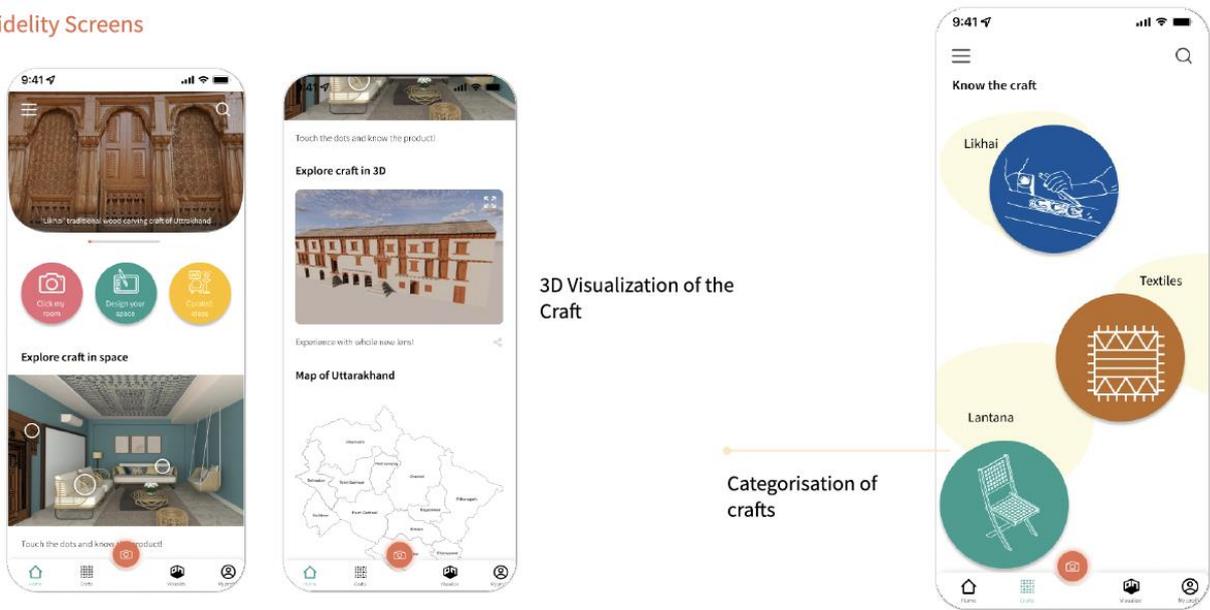


Fig. 2. Information Architecture of the Mobile Application (Source: Authors)

High fidelity Screens

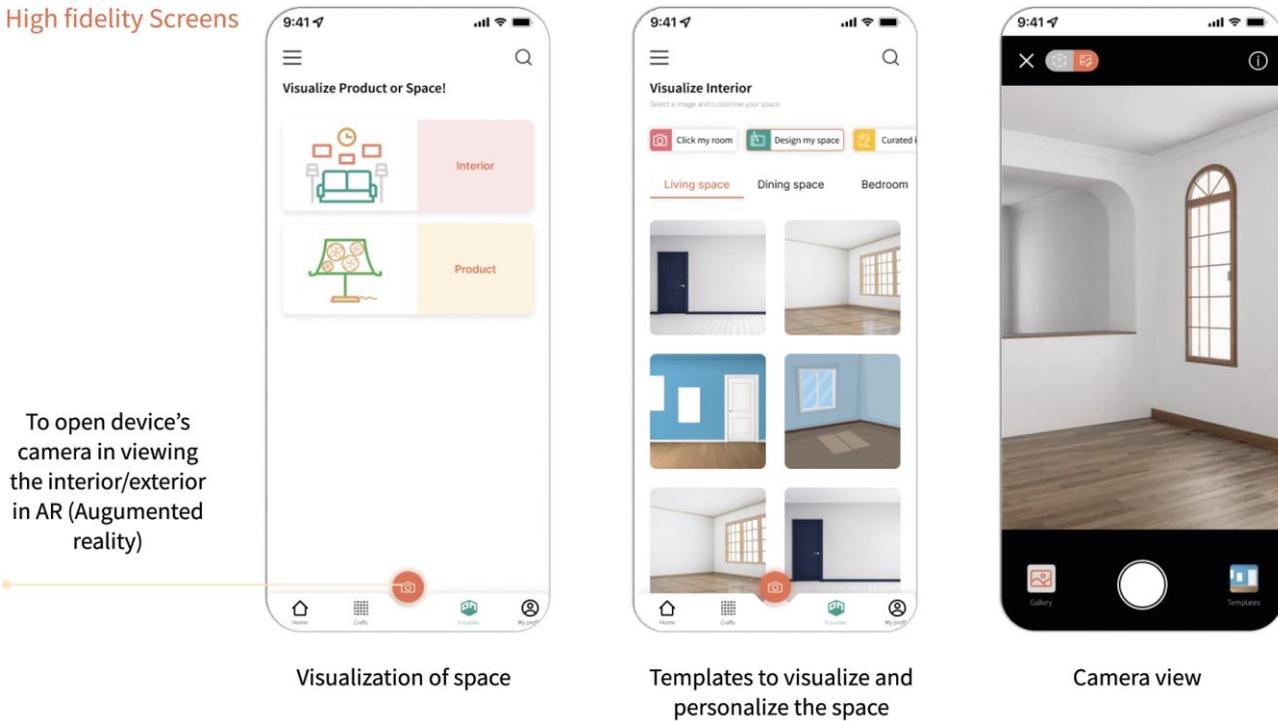


3D Visualization of the Craft

Categorisation of crafts

Fig. 3. Landing Page of the App, where Carousel; Features of the App; Exploration of Crafts in Interior Spaces; 3D Visualisation; and, the Map of Uttarakhand are showcased (Source: Authors)

High fidelity Screens



To open device's camera in viewing the interior/exterior in AR (Augmented reality)

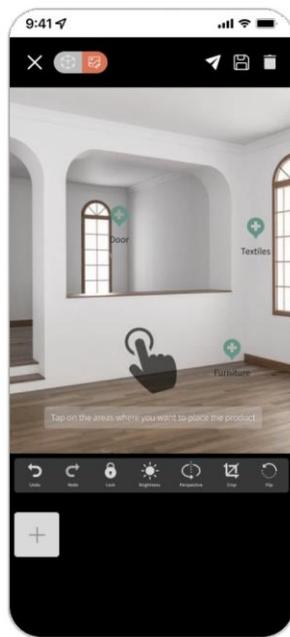
Visualization of space

Templates to visualize and personalize the space

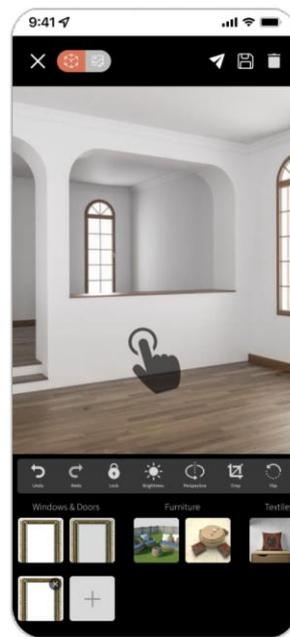
Camera view

Fig. 4. Visualising Applications of Crafts in Interior Spaces (Source: Authors)

High fidelity Screens



User can select and click on the screen where they want to place the product and experiment with the space



User can add the recommended products

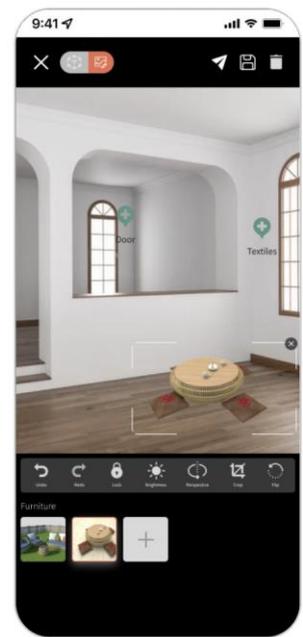
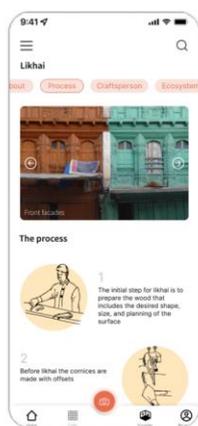


Fig. 5. Use of Augmented Reality to Visualise Crafts and their Applications in Space-Making (Source: Authors)

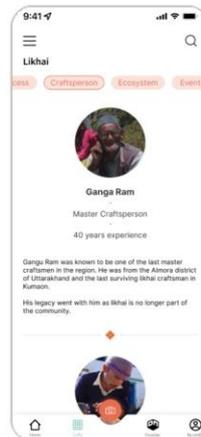
High fidelity Screens



Craft page has been divided into five categories of About, Process, Craftsperson, Ecosystem, Events



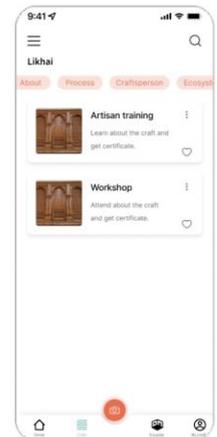
Carousel to showcase the highlights of the crafts



About the craftsperson, talking about the experience and a story about them



Ecosystem about the place where crafts gets practised



Events section which will have the all the information and news

Fig. 6. Comprehensive Details about Crafts (Source: Authors)

The prototype of the App has been developed in the software called Figma. To understand the prototype better, a video has also been created for the App. The prototype and video can be accessed by clicking the below link.

Prototype- [Utrakala Prototype Link](#)

Video- [Prototype Video](#)

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This project has not received any funding so far.

Conflict of Interests Disclosure

There are no conflicts of interests.

Author Contributions

A list of contributions of the project participants is presented below:

Conceptualization: <Smriti Saraswat, Rajeev Meena>

Data curation: <Sakshi Pandey, Smriti Saraswat>

Formal Analysis: <Smriti Saraswat, Sakshi Pandey>

Funding acquisition: <na>

Investigation: <Smriti Saraswat, Sakshi Pandey>

Methodology: <Smriti Saraswat, Sakshi Pandey, Rajeev Meena>

Project Administration: <Smriti Saraswat>

Resources: <Janani, Smriti Saraswat>

Software: <Aero, Adobe, Figma>

Supervision: <Smriti Saraswat>

Validation: <Smriti Saraswat>

Visualization: <Sakshi Pandey, Janani, Rajeev Meena>

Writing – original draft: <Sakshi Pandey>

Writing – review & editing: <Smriti Saraswat, Rajeev Meena>

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