Project Based Learning-II

Report

On

360 degree photo booth camera

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C E R T I F I C A T E

This is to certify that Ms Rujuta Katekar, Ms Shravani Sargar , ; Mr.Nishant Salunkhe , Mr Harshal Sagale , Mr Kunal Sapate ; has successfully completed the project entitled **"360 degree photo booth camera"** under my supervision, in the partial fulfillment of Bachelor of Engineering – Mechanical Engineering of Savitribai Phule Pune University.

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Place: Pune

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ABSTRACT

To design and develop a portable, automated 360-degree photo booth capable of capturing dynamic, high-quality video/photo content for use at events such as weddings, parties, brand activations, and exhibitions. The 360-Degree Bo Camera is an advanced imaging device designed to capture panoramic views of its surroundings in real time. Utilizing multiple ultra-wide-angle lenses or a fisheye lens system, this camera stitches together images to create an immersive, spherical video experience.

Introduction

The 360-degree photo booth has gained popularity for its ability to create engaging and shareable video content. Unlike traditional booths, this setup revolves around the subject to produce a smooth rotating video, creating a cinematic effect. The goal of this project is to build a cost-effective, user-friendly model suitable for commercial use. With advancements in sensor technology, artificial intelligence (AI), and image processing, the 360-degree camera has evolved beyond simple panoramic photography. It can be used in various fields such as security, forensic analysis, virtual reality (VR), augmented reality (AR), and cinematic experiences. The ability to capture infrared (IR) and low-light images further enhances its functionality, making it suitable for night surveillance and ghost-hunting applications.

This paper explores the working principles, technological advancements, and real-world applications of the 360-Degree booth Camera, highlighting its significance in scientific research, entertainment, and security domains.

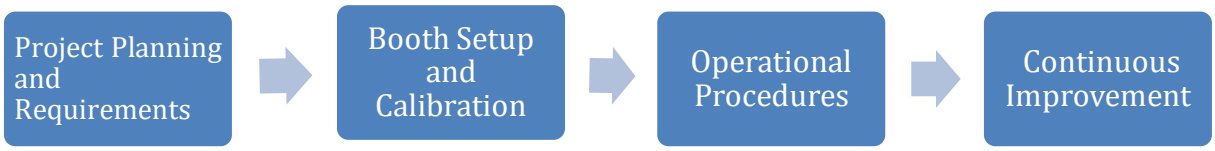
Problem Statement

To develop Conventional cameras, limit the viewing angle and engagement at events. There is a need for a 360-degree booth camera that can capture dynamic, all-angle visuals to enhance user experience and provide immersive, shareable content.

Objective

- To develop a 360-degree camera booth for capturing all-angle visuals.
- To provide high-quality photo and video output.
- To enhance user engagement through immersive content.
- To ensure easy setup and user-friendly operation.
- To make content easily shareable on social media platforms.

METHEDOLOGY



1. **Project Planning and Requirements**: Determine the specific goals of the project (e.g., event entertainment, product demonstration, marketing tool) and the target audience. Identify the necessary equipment (camera, platform, arm, software), personnel (attendants, video editors), and budget. Choose the appropriate video capture and editing software, considering factors like ease of use, real-time processing capabilities, and social sharing features.
2. **Booth Setup and Calibration**: Assess the event venue, ensuring ample space for the 360 booths, including the platform, rotating arm, and any social sharing stations. Follow manufacturer instructions to assemble the platform, rotating arm, and camera, ensuring stability and proper positioning. Install and configure the video capture and editing software on the computer or tablet, optimizing camera settings for the event's lighting conditions and real-time processing. Run test videos to calibrate the camera and lighting,

adjust camera angles, and optimize software settings for the desired video quality.

3. **Operational Procedures**: Train attendants to greet guests, explain the process, and assist with posing and using props.Ensure the camera captures footage from all angles, potentially in slow motion, to create the 360-degree effect. Quickly process the video, typically within seconds, to enable immediate preview, editing, and sharing. Provide options for guests to share their 360-degree videos via social media, email, or other platforms.
4. **Continuous Improvement**: Feedback Collection: Solicit feedback from guests and attendees to identify areas for improvement in the booth's design, operation, and video quality. Regularly update the video capture and editing software to leverage new features and enhance performance. Ensure regular maintenance of the equipment to prevent breakdowns and ensure optimal performance.

LITERERATURE REVIEW

1. Pioneering Development and Commercialization

Author: Orca Vue

The inception of the motorized 360-degree photo booth can be attributed to Daniel Rosenberry, founder of Orca Vue. In 2014, Rosenberry developed the first motorized 360 photo booth, which gained popularity through viral content and collaborations with major brands like Red Bull and HBO. Orca Vue's design featured a rotating camera arm capturing dynamic footage around a stationary subject, setting a new standard for event photography.

2. Integration of Augmented Reality (AR)

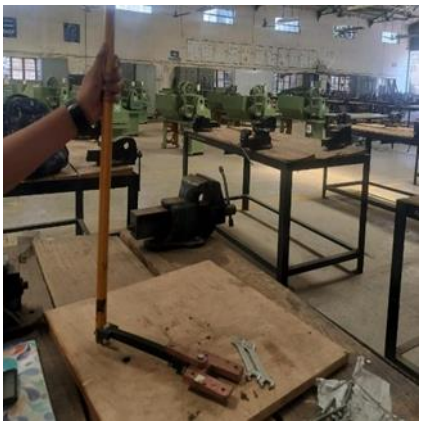
Author: Liu Xuhan

In 2016, Liu Xuhan from Nanyang Technological University introduced "iPhoto Booth," an innovative system combining traditional photo booths with augmented reality technology. This project aimed to enhance user engagement by overlaying virtual elements onto real-world images, providing a more interactive experience. The system comprised an iOS application and a responsive website, facilitating seamless user interaction and content sharing

Details of the Project

Rotating Arm with Camera Mount –

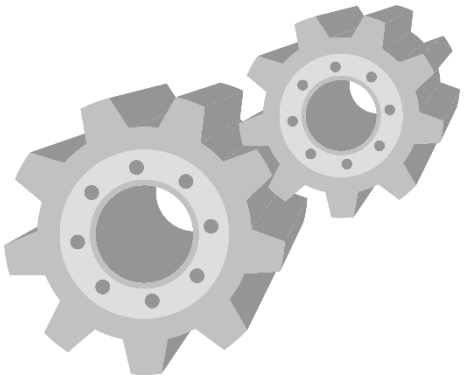
Holds the camera or phone and rotates around the person or group. It ensures the Smooth motion, Controlled speed (usually via a motor), Adjustable length to position the camera at the right distance.



DC Motor or Stepper Motor (for arm rotation)- The motor is responsible for rotating the camera arm smoothly around the central platform. It ensures a full 360-degree circular motion while maintaining a steady speed for smooth video capture.

Bearing - Rotational bearing at the base of the arm mount to allow 360° smooth movement. Supports rotating vertical load at the center of the arm mount. For supporting and guiding a horizontal rotating shaft. For continuous 360° rotation with wires—prevents cable twisting (especially with powered cameras/lights). Mount bearings securely to a flat metal or wood base.

Gear – The gear rotates to translate linear motion , enabling a full 360-degree rotation to produce a corresponding linear movement.



Circular Platform/Base - Structural support for the arm, motor, and user Sturdy and stable to prevent wobbling, can be portable or fixed. Non-slip, durable base for users to stand on. The circular platform is the base where guests stand while a camera (mounted on a rotating arm or external mount) revolves around them to capture 360-degree video or images.

Lighting Setup (Ring light, LED panels) - Lighting plays a crucial role in ensuring high-quality visuals. Proper illumination eliminates harsh shadows, enhances skin tones, and ensures consistent exposure, especially in low-light environments like indoor parties or evening events. Ensures the subject is well-lit from all angles. For even lighting and professional-quality visuals. Adjustable LED ring lights or mounted lighting units to ensure consistent exposure.

Power Supply (Battery or AC Adapter) – It provides power to the motor and electronics, needs to match the voltage and current requirements of the motor and controller**.**

Smartphone - High-quality camera (front & back) Good stabilization Wide-angle or ultra-wide lenses .Strong performance (for video processing)Wireless capabilities (for syncing, remote control, or cloud upload).

Working Principle

1. User Setup

- The user(s) step onto a central circular platform.
- The platform is stable and designed to support multiple people.

2. Activation

- The photobooth is started using mobile application

3. Rotation and Video Capture

- A rotating arm begins to spin 360 degrees around the platform.
- This is driven by a DC motor
- The motor speed is kept slow and consistent to ensure smooth video capture.
- The camera records a video during the full circular motion, capturing all angles around the user.

Cost Estimation

Rotating Arm	Rs 100
DC Motor	Rs 200
Bearing	Rs 320
Gear	Rs 90
Circular Platform /Base	Rs 150
Lighting Setup	Rs 380
Total Cost	**Rs 1240**

Result

The successful implementation of the 360-degree photobooth project results in a fully functional, interactive video capturing system that can produce high-quality 360-degree slow-motion videos. The key outcomes are:

1. Functional Prototype
2. High-Quality Video Output
3. User-Friendly Operation
4. Automation and Control
5. Real-World Application

Ready Successfully captured high-quality 360-degree photos and videos. Provided an immersive and engaging user experience. Easy-to-use system with smooth setup and operation.Generated visually appealing content suitable for social media sharing .Positive feedback received from users during test events.

Conclusion

The 360-degree photo booth is a dynamic and interactive solution for modern event photography. This project model provides a blueprint for building a functional, engaging, and market-ready setup that enhances event experiences and offers a creative content-sharing platform.

The 360-degree photobooth project model successfully delivers an innovative solution that combines technology, creativity, and user experience. It opens up possibilities for use in entertainment, marketing, and event industries.

References:

1. Event Photography Trends – 360-Degree Cameras and Booths. Event by Skift. Retrieved from: https://www.eventmanagerblog.com

2. How 360 Photo Booths Work. Pister Photo Booths. Retrieved from: https://www.pixsterphotobooth.com

3. 360-Degree Camera Booths: The Future of Event Entertainment. The Knot. Retrieved from: https://www.theknot.com

4. Understanding the 360 Photo Booth Trend. Shutter Booth Blog. Retrieved from: https://www.shutterbooth.com