Augmented Reality Face Filter Project Report

Course: AR/VR Applications Final Project
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Project Title: Interactive AR Face Filter Using 3D Elements
Drive Link -
https://drive.google.com/drive/folders/1z6jFpL1cNE1twO2ERZzCYGZGMvMBGF_e?usp=sharing

Objective

The objective of this project was to design and implement a fun, interactive face filter using Augmented Reality (AR) that enhances real-time user interaction through virtual overlays. The filter was designed to overlay 3D animal-like ears and a nose on the user's face using facial recognition and tracking.

Tools & Technologies Used

- **Platform:** Spark AR Studio
- **Technology:** Augmented Reality with real-time face tracking
- **Assets Used:** 3D models (cat ears and nose), texture mapping, face mesh
- **Devices Tested:** Android Smartphone

Features

- **Real-Time Face Tracking:** The filter detects facial landmarks to align virtual elements precisely.
- **3D Object Placement:** Realistic 3D cat ears and a nose are positioned over the user’s head and nose, respectively.
- **Glasses Compatibility:** Filter is optimized to work even when the user wears glasses.

- **User Engagement:** Designed for social media interaction and personal entertainment.

Challenges Faced

1. Aligning 3D models accurately with varied face shapes.
2. Maintaining filter stability with glasses and movement.
3. Optimizing the filter for performance on low-end devices.
4. Testing across lighting conditions and skin tones.

Outcome

The final filter successfully overlays realistic 3D animal ears and nose onto the user's face, as demonstrated in the attached screenshot. It responds smoothly to facial movements and retains alignment throughout interaction.

Future Improvements

- Add animation to ears for better engagement.
- Include audio effects or voice modulation.
- Allow user customization (e.g., change filter theme).