AirPic

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Overview

To capture moments effortlessly with an intuitive gesture-powered photo experience that sets a new standard in camera interaction.

Tech Stack

App Development

- Android Studio - Local IDE
- Kotlin
- Android Splash Screen API
- Accompanist Permissions Library - Handling Audio and Camera Permissions
- Android ViewModel - Store & Manage UI - related Data
- Android Jetpack Navigation Component (NavHost and NavController classes) - Navigation between fragments
- Android Jetpack Compose (Compose Modifier, LaunchedEffect) - UI Development
- Android CameraX API (CameraController, Preview View, LifecycleCameraController classes) - Camera Operations

Tech Stack

App Development

- Kotlin CoRoutines - Asynchronous Programming in Camera and Background Operations
- Android Material Design Component - Button, IconButton, BottomSheetScaffold, TopAppBar, Image, and Text
- Android MediaStore API - To store the captured images and videos in the device media's database
- Toast - Displays short-duration messages
- ContextCompat - Used to ensure that the app can run on different Android versions

Tech Stack

Smile Detection

- Google Colab - Online IDE
- Visual Studio Code - Local IDE
- Tensorflow's Keras API
- VGG16 (Visual Geometry Group 16) - a pre-trained feature extractor to capture image patterns, enhancing the model's ability to detect smiles.

Hand Gesture Detection for Capturing Photos & Zooming In and Out

- Visual Studio Code - Local IDE
- OpenCV (imutils) - capturing video from the camera
- Mediapipe (Hands) - Hand tracking model
- NumPy - To handle numerical operations

Timeline

Timeline

Project Limitations

Challenges and Progress in Integrating Models with Camera App
Development

Demo

We will be demonstrating the following models

- AirPic: The App
- Smile Detection Model
- Palm Detection Model
- Gesture Model for Zooming In and Out

Learnings

Future Scope

1. To implement customized in-app settings such as grids and HDR.

2. Create a centralized in-app Gallery for efficient management and viewing of images and videos, enhancing user experience

3. Develop our project into an iOS App

4. Enrich user experience by incorporating intuitive gestures like turning on the video or activating the timer.

5. Transform our project into a vibrant social platform, fostering connections and collaboration.

Conclusion & Thank You

We value and appreciate your feedback.