Mobile Applications for Sensing and Control (EEP 523)

Homework Assignment 2

Objective: The goal of this assignment is to continue exploring React Native and to practice accessing native features and APIs in React Native.

Instructions:

1. Create a new React Native app that allows users to take two photos of people face, then either swap the faces with each other or blur the two faces.
   You don't have to implement both the features; you can select either face swapping or face blur.
2. The app should have the following features:
   - A button to take a photo using the device's camera.
   - A button to change the camera from back to front and vice-versa.
   - A button to swap/blur the face.
   - A button to undo the swapping/blurring.
   - The ability to display the captured photos on the screen.
   - The ability to save the edited photos in phone storage.
   - The ability to preserve the state when the device is in landscape mode.
   - The ability to detect if the captured image has a face.
   - If the captured image has no face, then the app should show an appropriate toast message.
3. You are free to design the UI of the app and show the toast message for any case and at any point, the only thing is it should align with the app goal.
4. Please refer to the images at the bottom, to get an idea of the app design.

You can use:

5. React Native Image component to display the photo.
6. React Native Image Picker component to access the device's camera and photo library.
7. Face Detection and Blur Image APIs.

Submission:

Submit your completed project through Canvas by Friday 21st April 2023 for 5% bonus. The regular deadline is Saturday 22nd April 2023. Your submission should include:

1. A .zip file containing the source code for your app.
2. A readme file inside your zip file explaining how your app works, how many hours it took you to complete it, what were the most challenging parts, and please cite all the websites and any other resources you used.
3. A video showcasing the working of your App, you may include your voice, it is not compulsory. Your video should show all the requirements of the assignment.

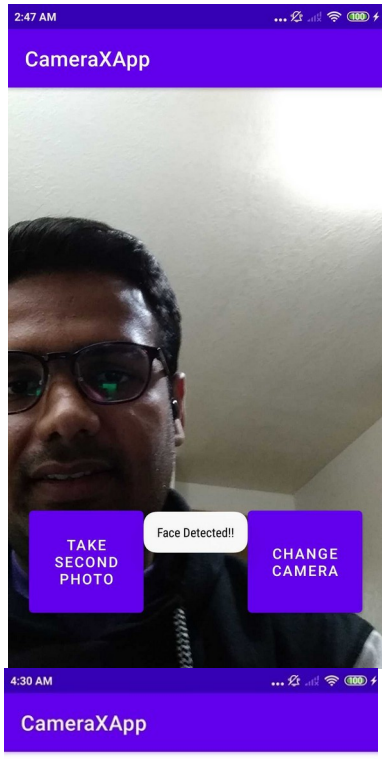
Grading:
This assignment will be graded based on the following criteria:

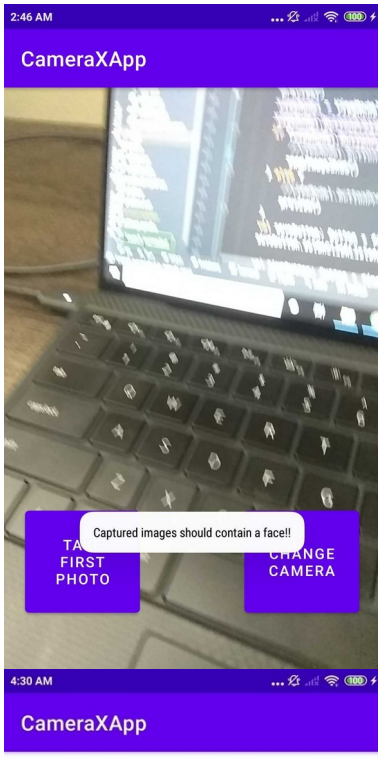
- Proper functioning of the app (70%)
- Quality and clarity of the code, and a descriptive readme file (30%)

References:

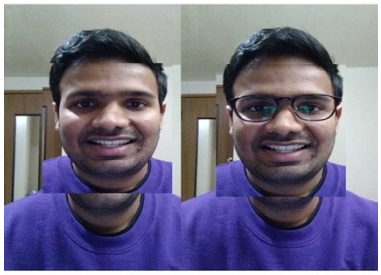
1. Toast Message in React Native.
2. Image Component in React Native.
3. BlurView in React Native.
4. Google ML kit to Detect Face in Android.
5. Expo FaceDetector for iOS and Android.
6. How to use Camera and how to detect face in React Native.

App Design Ideas:





SWAP SAVE



UNDO SAVE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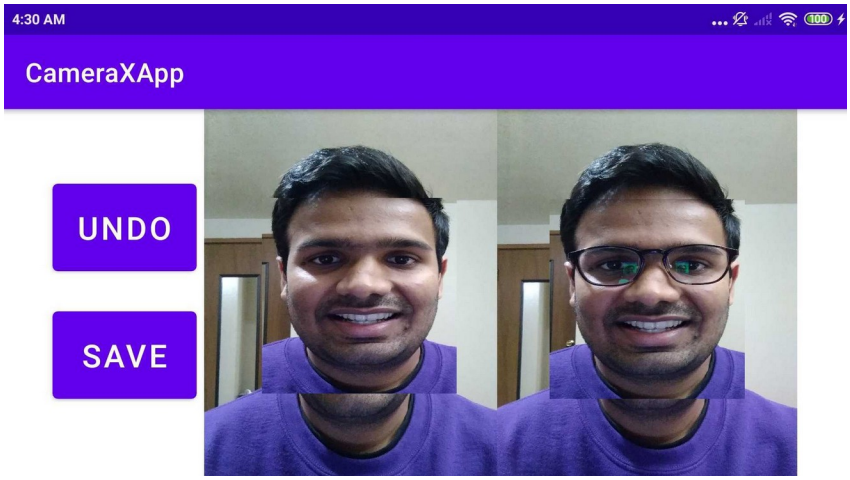
4:30 AM
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