

Introduction

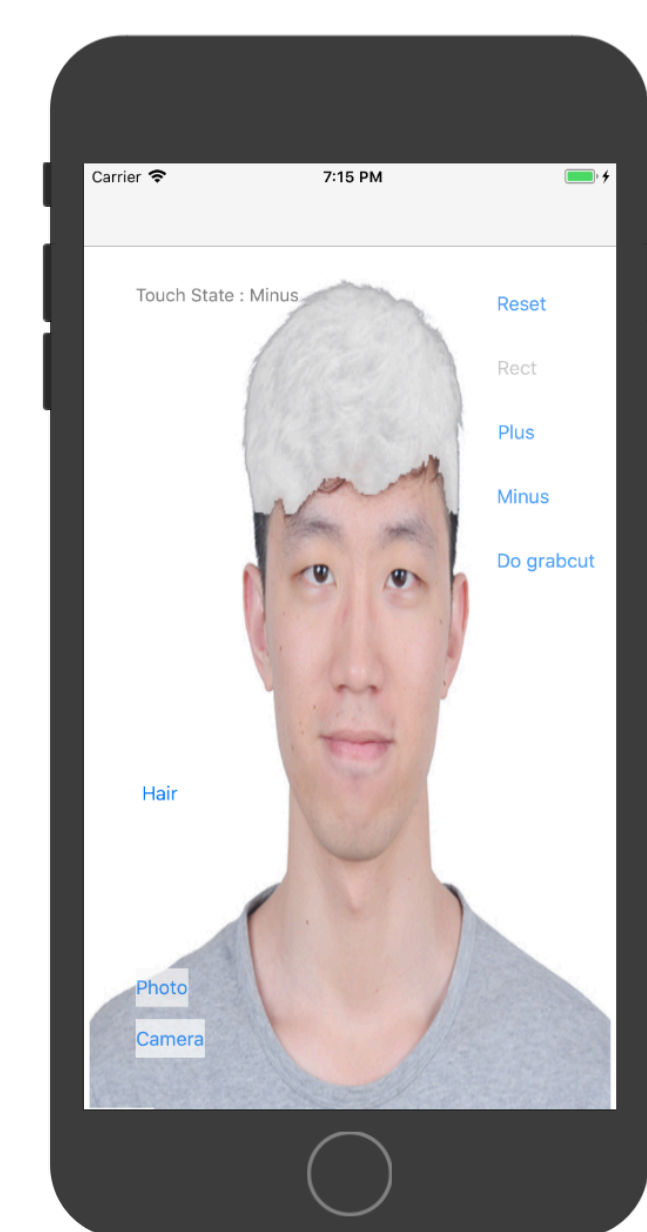
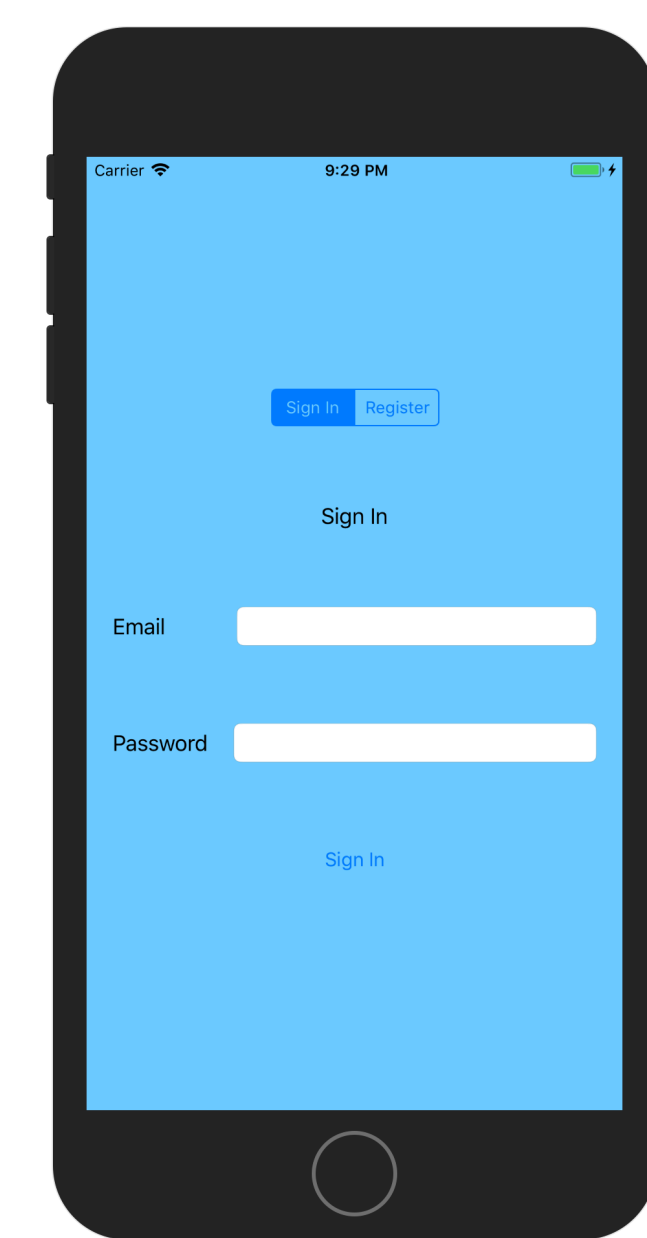
- iOS application
- Detect human hair with user interaction
- Remove the old one, try new hairstyles on!

Firestore

- Register with email
- Already registered? Sign in!
- Google Firestore

GrabCut

- GrabCut algorithm
- Interactive Foreground Extraction



MAIN TECHNIQUE

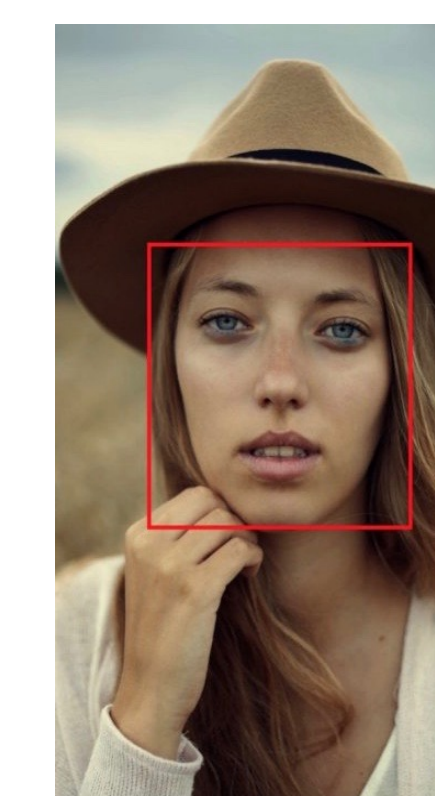
GrabCut

- An image segmentation algorithm based on graph cuts
- Using a **Gaussian mixture model**, estimates the **color distribution** of the target object and background.
- As this estimation is likely to be more accurate than the original, taken from the bounding box, this two-step procedure is repeated until convergence.
- Estimation can be further corrected by the user by pointing out misclassified regions and rerunning the optimization. The method preserve edges.



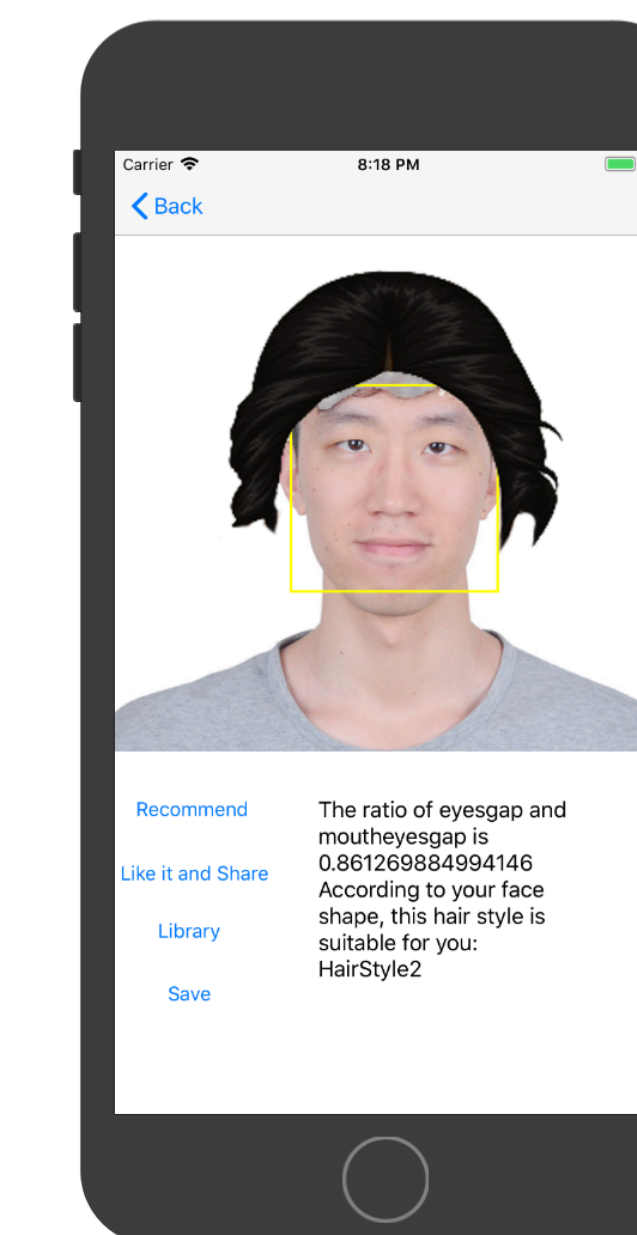
Core Image

- An image processing and analysis technology that provides high-performance processing for still and video images.
- Use many built-in image filters to process images and build complex effects by chaining filters.
- In our app, we use Core Image to detect human face and collect detailed information, such as eyes' position and mouth's position,
- The data was sent to the backend of the app, then calculate the user's head shape so that our app give recommended hairstyle according to their head shape.



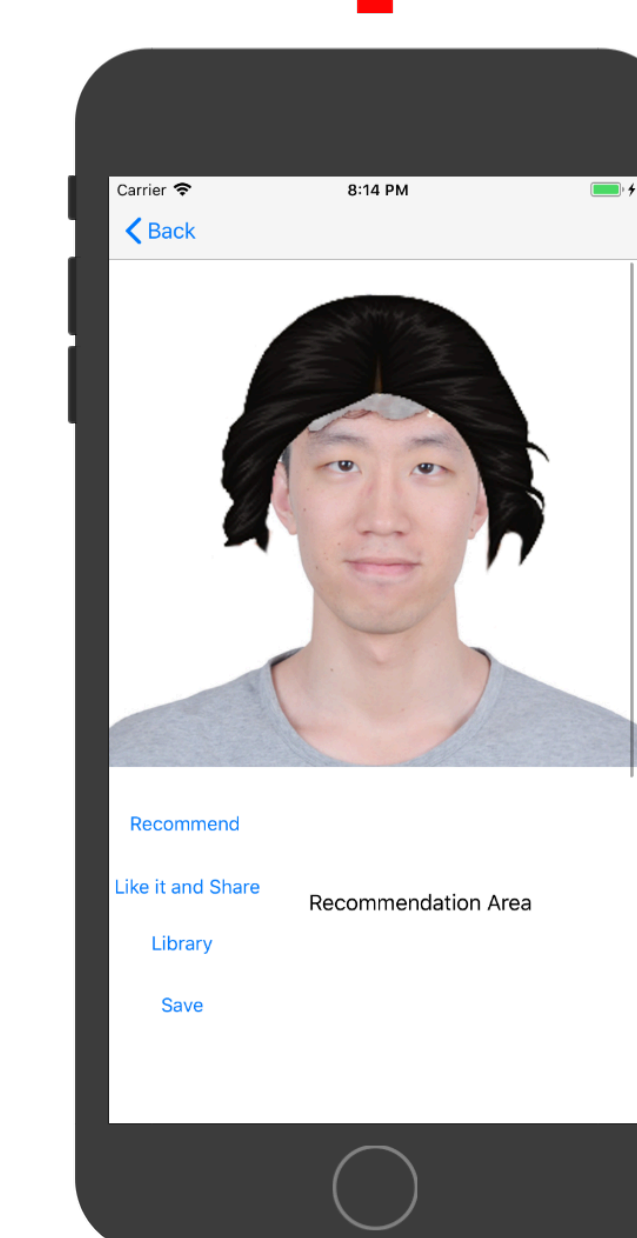
Recommendation

- Core Image algorithm
- Based on face's data, give hairstyle recommendation



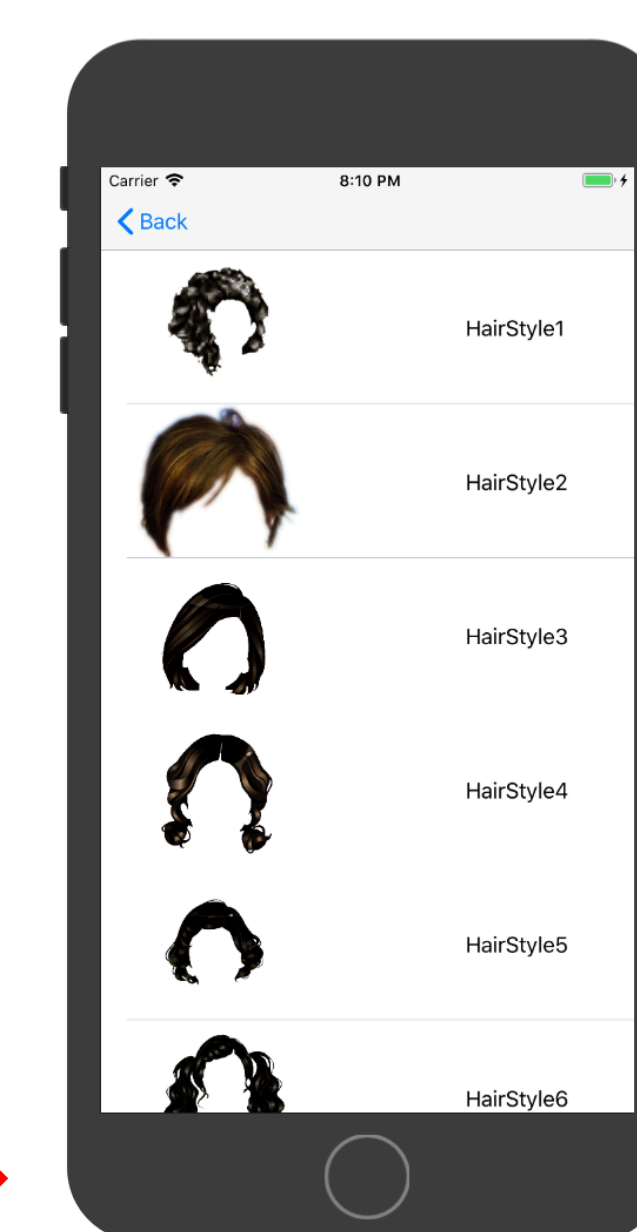
Match Your Face

- Hairstyle matching
- Zooming Using the Pinch Gestures



Select Hairstyles

- Hairstyle selection
- 10 hairstyles till now



User Stories

- I, user, want to create an account via social media or email address.
- I, user, want to take photos and send them into the software.
- I, user, want to save pictures into my phone.
- I, user, want to hear suggestions from the App.
- I, user, want to share my favorite picture to social networks.

Accomplishments

- The user can create an account via email address then log in.
- The user can send photo from the album to the App.
- The user can save picture with changed hairstyle into album.
- The user can get suggested hairstyle according to the head shape.
- The user can choose hairstyles on the table view.