

Avocado 2.0

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How can Computer Vision and AI create the pathway for a Personalized Customer Journey (Banking, Retail, Telecom)?

For this problem statement, we are proposing a solution by using realistic modeling of facial features using meshes.

We are targeting customers of banks, so we are targeting problems like customer greeting, fraud detections and other consumer experiences in day to day life in banks.

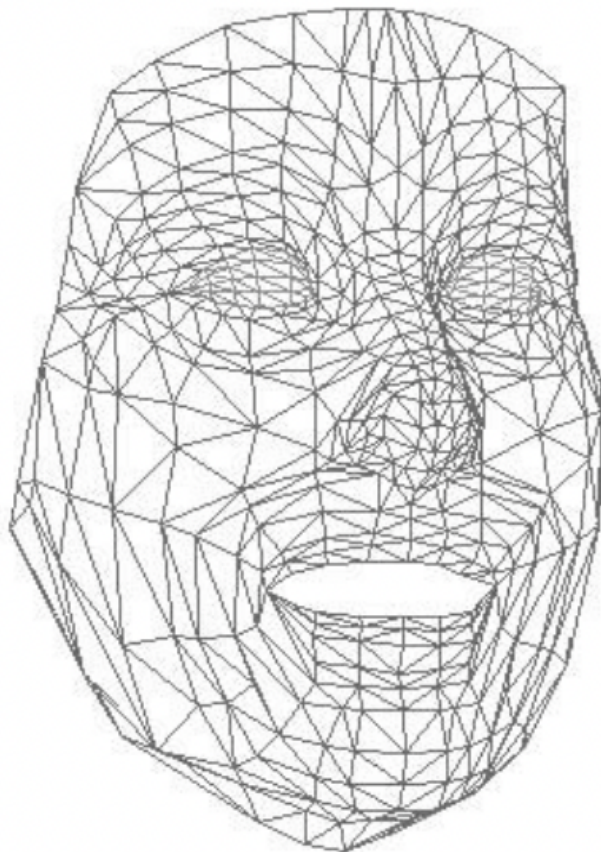
We are proposing the following architecture:

1. First time a customer opens a bank account, he/she submits a photo of themselves and using that photo we will make a mesh of the facial structure and features and store that mesh in the database mapped to the account number of the customer.
2. Now, from next time onwards, whenever the customer comes back to the bank, as soon as he/she enters the bank representative's office, a camera installed there will click their picture, and show a pop-up of the profile in the representative's device.
3. The pop-up will be managed in the following way:
 - a. A mesh will be generated from the recently captured image of the person, and using that mesh, we will apply some

AI/ML algorithms to find the closest mesh in the database to the currently captured mesh.

- b. Once we have the closest mesh, we will calculate the similarity of both the meshes, and if the similarity is above a certain threshold (which needs to be kept very high as high accuracy is required), we will show the profile of that person in the representative's machine.
4. In case a new customer comes in the bank, the mesh will not be similar to any other existing mesh, hence, there will be no pop-up in the representative's computer.

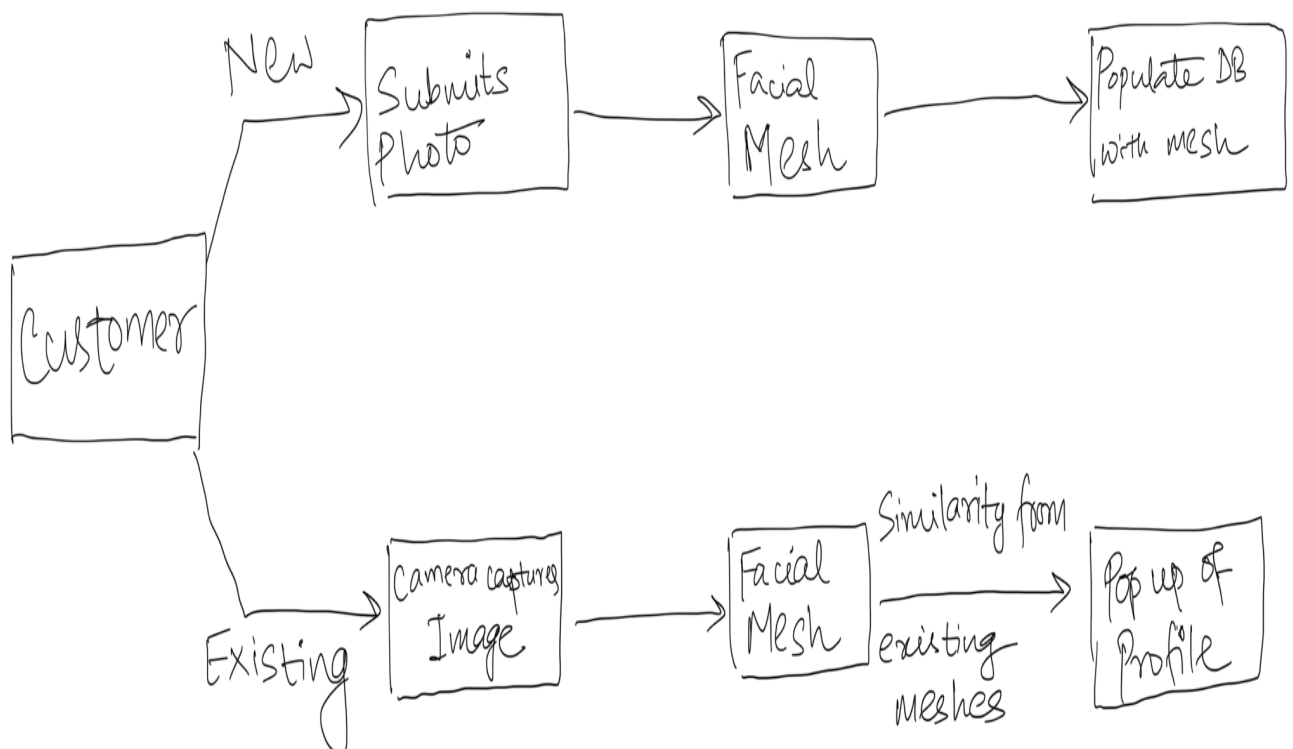
A sample mesh of a human face with facial features would look something like this:



The use cases where this can come into play are the following:

1. Reduce the time to ask the customer for account number and identifications before opening up their profile
2. In case of bank transactions from kiosk, we can alert the customer in case someone else is using their card, and hence reducing the frauds
3. In the situation of a customer traveling to a different city, the system can identify that the customer is visiting a branch in a different city than their home city. This can help the banks to pitch in some benefits and travel cards/vouchers to the customer.

Architecture Diagram / Flow Diagram of the application:



Some points to be considered:

- The facial feature mesh generation is still a current research work in progress, and there is not much accuracy achieved in the work yet.