



IMPLEMENTATION ON INTEGRATION OF BIOMETRIC TECHNIQUE TO SECURITY IN CLOUD COMPUTING

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ABSTRACT: Cloud Computing has been information technologies services on developed to deliver demand to organizations like as individual users, this technology is still in its early stages of development because it suffers from different security threats that prevent users trust it In this paper, we identify different security problems existing in cloud from several research papers & we show suggested solutions. These systems are not greatly accepted because of biget attention & co-operation of users to provide data. Recently digital camera is used to capture images & users hand placing is constrained using pegs.

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[1] INTRODUCTION

Biometrics is technology of identifying special human subjects by means of measuring & analyzing one or more inherent behavioral or physical traits. These human body feature include fingerprints, voice patterns, eye retinas & irises, facial patterns & hand dimension. System of Biometric are include applications making use of biometric technologies & which allow identification automatically. In principle, processing of personal data involving use of a system of biometric is considered by privacy experts to be only justified within places requiring a high level of security & absolute identification procedures.

Cloud Computing

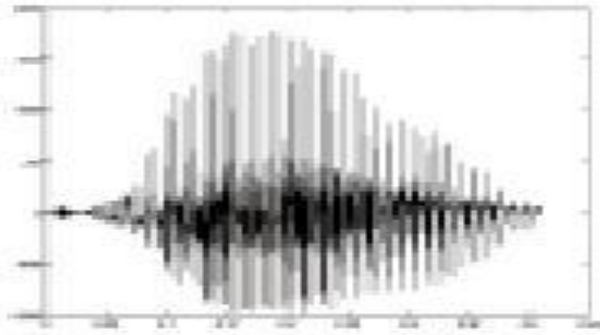
Cloud computing is a type of Internet-based computing that provides shared computer processing resources & data to computers & other devices on demand. This is a model for power on-demand something is a shared pool on configurable computing resources which could be reepid provisioned & released within minimal management effort. Cloud

computing & storage solutions provide users & enterprises within various capabilities to store & process their data in either privately owned, or third-party data centers that might be located far from user-ranging in distance from across a city to across world. Cloud computing relies on sharing of personnel to provide stick

together & low scale, similar to over same as public utility an electricity network.

[2] TOOLS & TECHNOLOGY

Voice Print - Voice recognition is very different to speech recognition. Speech recognition detect words & sentences from an incoming audio signal whereas voice recognition tries to detect speaker given a voice sample. But as each & every person has got different voice pattern that's why no two voice prints are matched.



voice print

Fig. 1: Voice Print

Canny Edge Detection

John Canny considered mathematical problem of deriving an optimal smoothing filter given criteria of detection, localization & minimizing multiple responses to a single edge. He showed that optimal filter given these assumptions is a sum of four rapidly growing terms.

He also showed that this filter could be well approximated by first-order unoriginal of Gaussians. Canny also introduced notion of non-maximum suppression, which means that given presmoothing filters, edge points are as points where gradient magnitude assumes a local maximum within gradient direction. Looking for zero crossing of 2nd derivative along gradient direction was first proposed by Haralick.^[9] It took less than two decades to find a modern geometry variational meaning for that operator that links it to Marr-Hildreth (zero crossing of Laplacian) edge detector. That observation was presented by Ron Kimmel & Alfred Bruckstein.

[3] PROPOSED WORK

In proposed work we have to acquire biometric data & analyze & validate it after transmission, signal processing, decision making & storing. We would use Matlab as simulation environment & would use edge detection techniques such as canny algorithm to find edge of samples & get matrix representation of stored images of faces or Finger prints. Then

we would use various graphical techniques to compare them & comparison would be represented within form of Histograms.

Data Acquisition

Data collection involves use of sensors to detect & measure an individual's physiological or behavioral characteristics. biometric feature must have following characteristics:-

Universality, which means that every person should have characteristic, Uniqueness, two persons should not have same term or measurement of characteristic Permanence, characteristic should be invariant with time, Measurability.

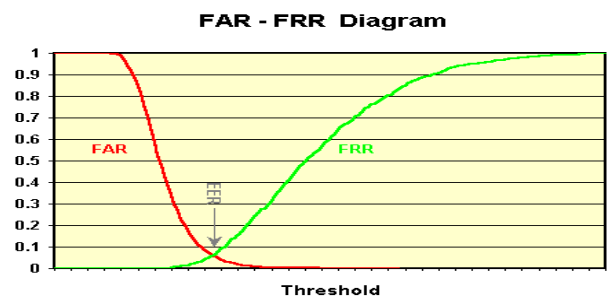


Fig. 2: FAR-FRR Diagram

Validity Of Test Data

Here, it checks for validity of processed data & decides whether person is authorized or not. Testing biometrics is difficult, because of extremely low error rates involved.

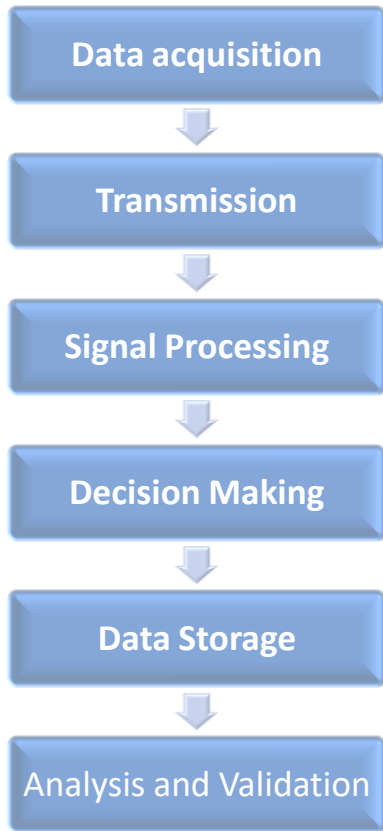


Fig. 3: Proposed Process To Compare Biometric Information

[4] RESULT & DISCUSSION

Image Processing In Matlab Using Edge Detection Mechanism

In Matlab we have used canny based edge detection to find edges of palm as it is consider better than other edge detection mechanisms.

```

im=imread('1.jpg');
imagesc(im);
  
```

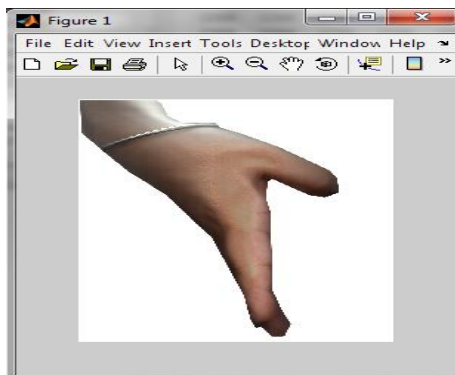


Fig. 4: Existing Image(1.jpg)

```

im=imread('1.jpg');
img=rgb2gray(im);
sob_im=edge(img,'sobel');
figure(2);
imagesc(sob_im);
axis('square');
colormap('gray');
imshow(sob_im);
  
```

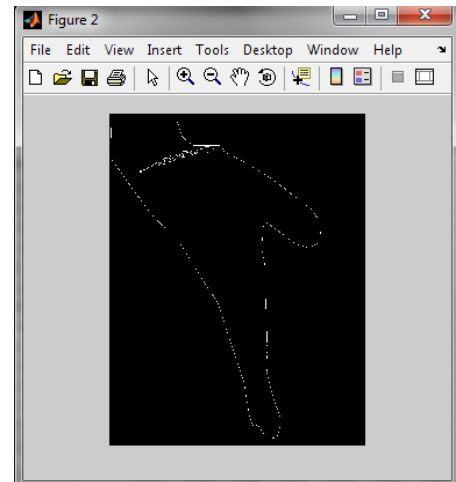


Fig. 5: Image(1.jpg) After Applying Sobel Operator Based Matlab Code

Design View Of 3D Based Biometric Comparison

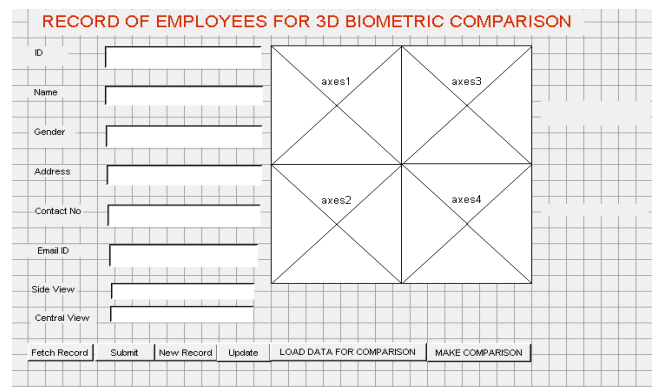


Fig.6: Design View Of 3D Based Biometric Comparison



To make comparison type side view & central view image name & load data for comparison

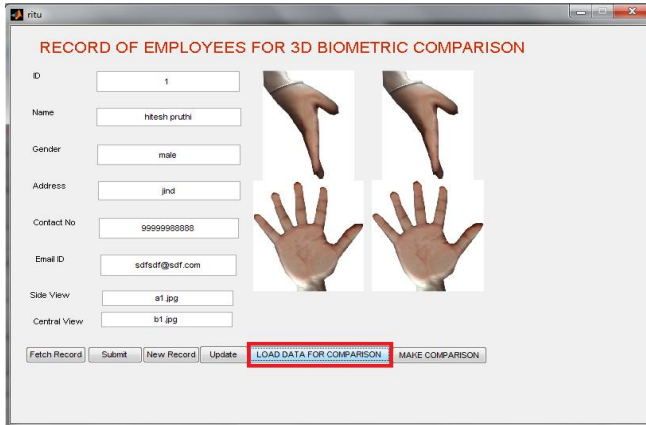


Fig. 7: Loading Of Images For Comparison

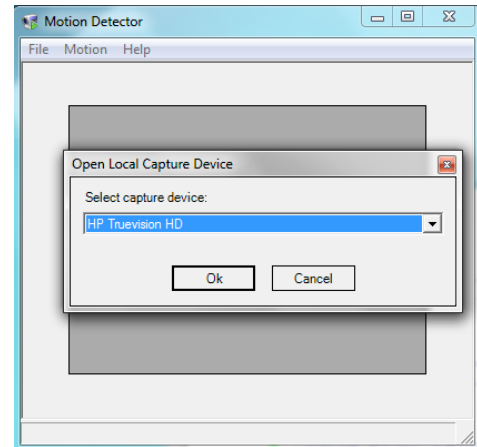


Fig 9 Capture device

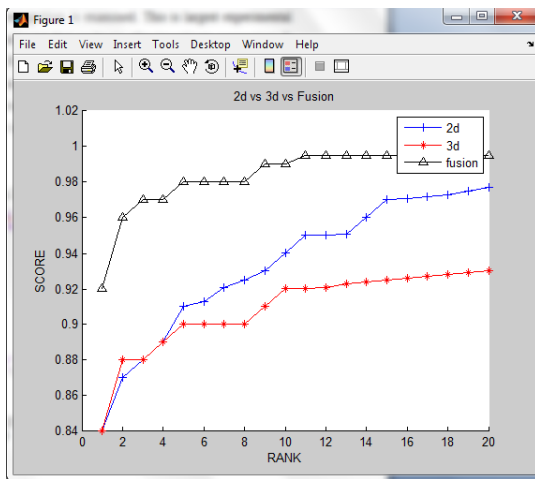


Fig 8 2d & 3d fusion

Implementation of Motion Sensor to capture biometric sample

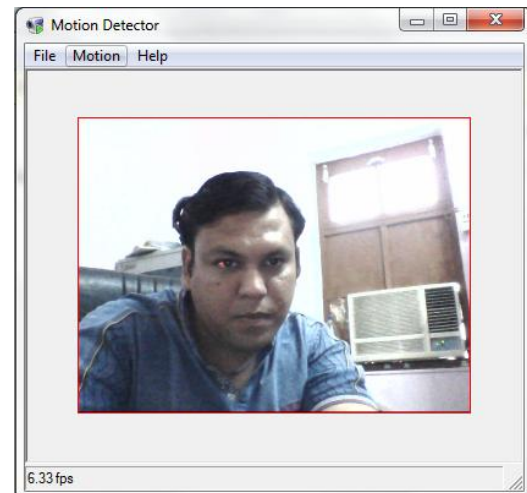


Fig 10 Motion Detector

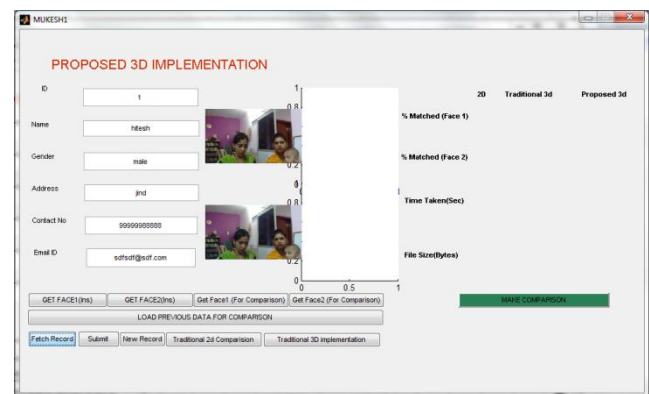


Fig 11 3D Implementation



	2D	Traditional 3d	Proposed 3d
% Matched (Face 1)	4.85893	4.85893	5.02431
% Matched (Face 2)		4.51895	3.49762
Time Taken(Sec)	0.027411	0.0597542	0.0164728
File Size(Bytes)	6636	13262	6977

Fig 12 Traditional 3d & proposed 3d

Code to Capture image

```
axes(handles.axes1);
x11=get(handles.edit1,'string');
vid = videoinput('winvideo');
preview(vid);
start(vid);
set(vid, 'ReturnedColorSpace', 'RGB');
im = getsnapshot(vid);
im1=imresize(im,0.20);
imshow(im1);
```

Code to Encrypt image

```
t=imread('key.jpg');
ffff=bitxor(im1,t);
```

Code to Save image on disc

```
imwrite(ffff, strcat('F', x11, '.jpg'));
```

code to Stop image capturing

```
stop(vid);
delete(vid);
```

Code to compare Biometric samples , check comparison time, & check size

```
x11=get(handles.edit1,'string');
```

```
x=imread(strcat('C', x11, '.jpg'));
t=canny(x,1,1,1);
```

```
x1=imread(strcat('CC', x11, '.jpg'));
t1=canny(x1,1,1,1);
```

```
xr=imread(strcat('F', x11, '.jpg'));
yr=imread(strcat('FF', x11, '.jpg'));
t2=canny(xr,1,1,1);
```

```
t3=canny(yr,1,1,1);
```

```
tic
```

```
rrr1=ait_picmatch(t,t2);
```

```
rrr2=ait_picmatch(t1,t3);
```

```
xxxx=toc;
```

```
set(handles.text17,'string',xxxx);
```

```
set(handles.text10,'string',rrr1);
```

```
set(handles.text11,'string',rrr2);
```

```
if rrr1>50
```

```
set(handles.result1,'string','MATCHED');
```

```
else
```

```
set(handles.result1,'string','UNMATCHED');
```

```
end
```

```
if rrr2>50
```

```
set(handles.result2,'string','MATCHED');
```

```
else
```

```
set(handles.result2,'string','UNMATCHED');
```

```
end
```

```
imwrite(t2, strcat('FC', x11, '.jpg'));
```

```
imwrite(t3, strcat('FFC', x11, '.jpg'));
```

```
imstate=dir(strcat('FC', x11, '.jpg'));
```

```
size=imstate.bytes;
```

```
imstate1=dir(strcat('FFC', x11, '.jpg'));
```

```
size1=imstate1.bytes;
```

```
set(handles.fs3,'string',size+size1);
```

[5] CONCLUSION

During this instance of time, several different glitches related to palm print recognition have been addressed. Furthermost of studies has been done in palm print recognition due to its stability, reliability & exclusivity. Furthermore, this has been employed for law enforcement, civil applications & access control applications. Verification rate could be computed by employing False Acceptance Rate (FAR), False Rejection Rate (FRR), as well as Equal Error Rate (EER). FAR is percentage of accepted not genuine claims over total number of not genuine accesses. FRR is percentage of rejected genuine claims over total number of genuine accesses. For 3 D recognition multidimensional data has been taken & complexity of algorithm increases as array of matrix are compared in such cases. It would increase accuracy but takes lot of time on rendered images. So we have extract only useful part of biometric object such as pattern of palm in multidimensional form.



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