Biometrics

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Lecture No. # 22

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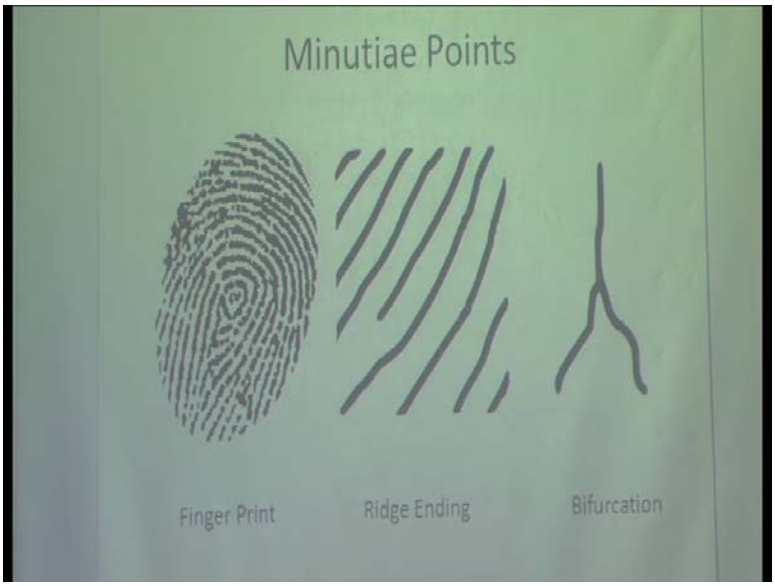

I will be vocalized-noise finger prints recognition technique by many ways by pattern recognition by using minutiae points here. I will be doing by using minutiae points this is a normal finger prints. If you zoom in, we can find or a termination points this is this call.

We know this tell me the what you want to do, what you want to do, what you are planning what you want to do.

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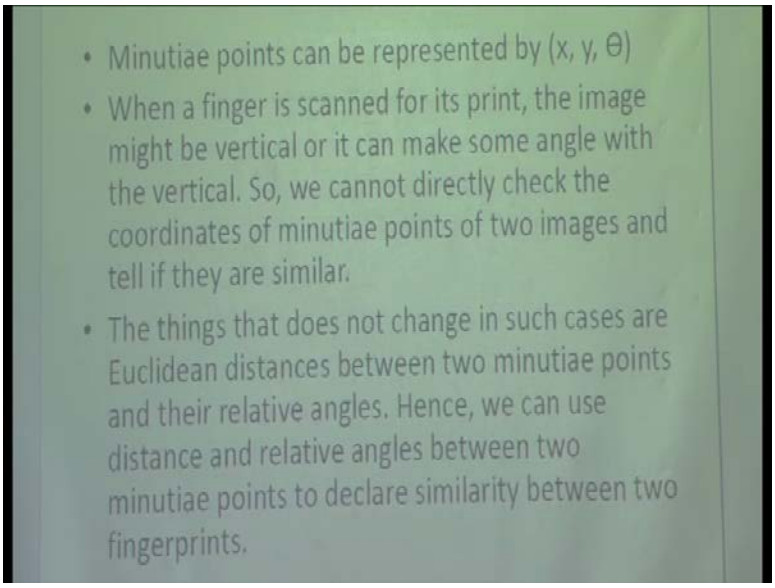

Minutiae points is the only thing that remain constantly in all the project will be based on this paper minutiae cylinder code, a new representation and matching technique for fingerprint recognition by davide maltoni and matteo for every minutiae points .

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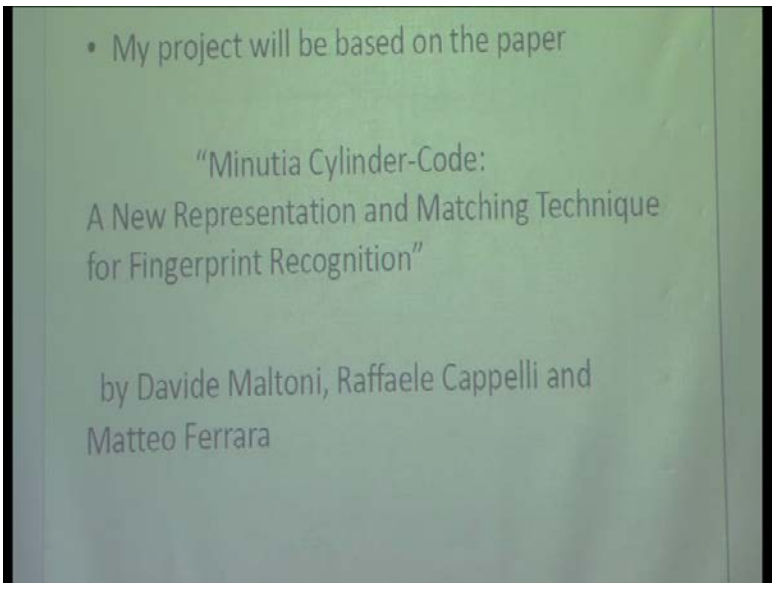

It will construct a cylinder of radius of some fix radius r.

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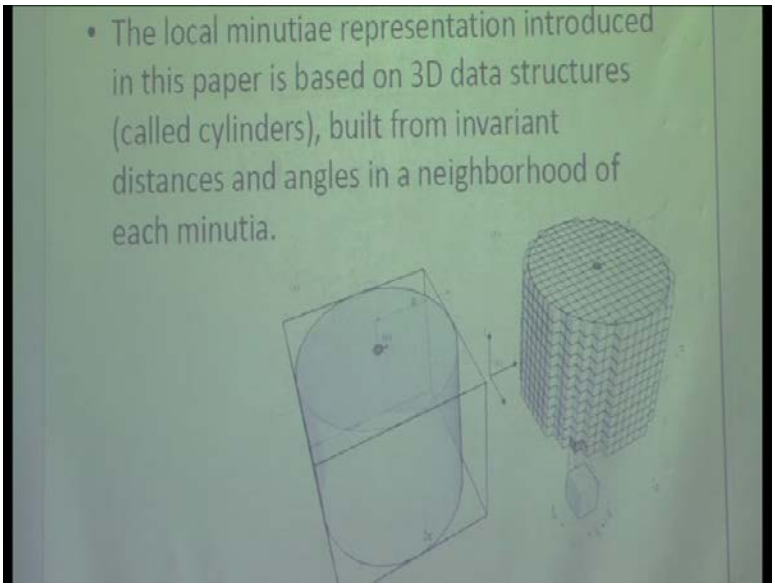

If this is the fingerprint and these are some minutiae points, it will take some power fix minutiae points and it will from a circle of radius r. We will select all the minutiae points inside this circle and it will construct the cylinder and the values inside each set of cylinder will be-will be some constants of distance just 3d 3d 3d.

So, each point will construct a cylinder and the value inside each sink. We have to know now so it will be a function of for each point for each point lying inside equal distance of m 1 m t and we will also calculate the relay to angle theta 1 minus theta 2 something and the function and the value for each cell will be the function of these distances of these 2 variables function of gauss something like that.

Distance with respect to what cylinder will be constructed for every minutiae points 1 minutiae point, there will be a fix radius of r all the points lying inside will be considered for constructing that cylinder and for each point for each point lying inside will calculate the distance of this 1 and the other point and we also calculate the relay to angle.

You got the 2 parameters.

Yes and using these 2 parameters we will fill up the and we will add some functions functions to this and we will.

What is distance you are getting the distance and difference between the.

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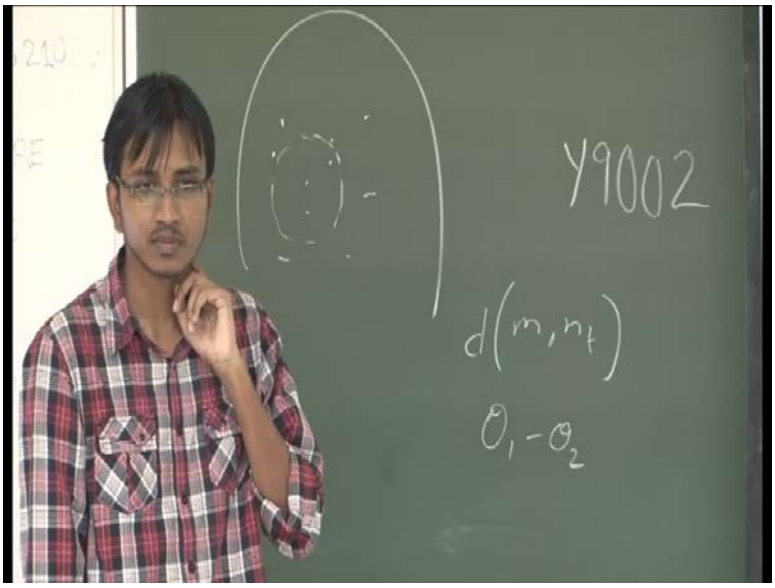

Given a minutiae, you are having 1 orientation basically at difference of orientation. So, 1 slice in this cylinder will be telling something about that to what are those minutiae, which is orientation difference so the height of this basically starting from pi to minus pi we quantize it from pi to minus pi to some.

Height is your angle.

Yes-yes the orientation difference and within each slice all of this small these blocks or the cells will be contributed and it is something like that a single slice will be contained all those information which are having this orientation difference, because every slice is telling something about the orientation difference of that that value.

Orientation is basically the height and each cell in that is basically telling something the difference. So, that is a 2 d it is not related to the special coordinates. It is just telling something about the fix minutiae single minutiae and the neighborhood the type of neighborhood and later what in the in the matching. What they will be doing that they will be matching 2 when you are matching 2 minutiaes they will find a distance between 2 cylinders.

But the point is you have to understand still i am not clear,so this is the first meeting so in the second meeting you must be able to tell what is cylinder. How you with respect to some data you show with a and once you know the these are cylinders.

Slice view of the cylinder and the minutiae points lying inside the radius r fixed radius.

We are telling the distance.

We are actually having minutiae points means we will have an image we will construct the.

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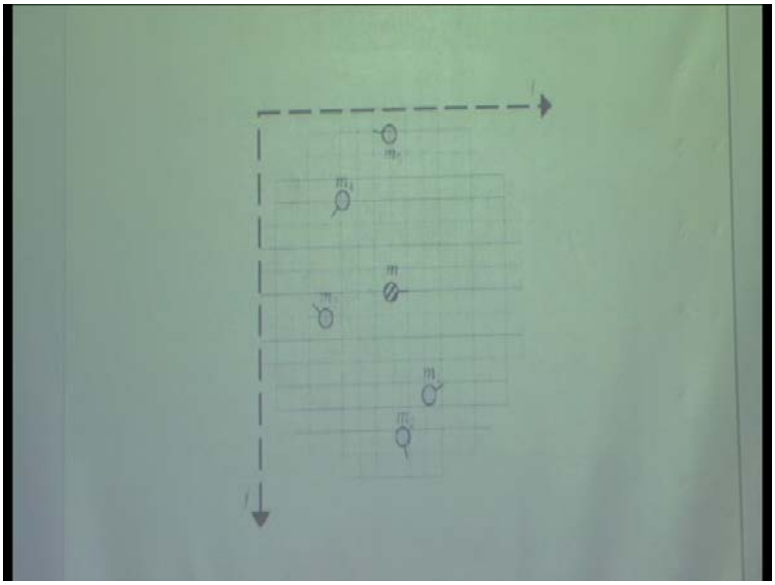

This will be considered to to to create the cylinder for this minutiae and then that cylinder first minutiae and then when you are matching, you match this cylinder and what he here the this is the center point and then for fix minutiae. This is also shown, so when we are considering say then he will tell other is the orientation difference. Orientation will be telling that that slice that this minutiae will be contributing and within that slice what is the contribution and how.

As we have to check it the if 2 images are similar they will construct a global cylinder and we check if the cylinders are same if the if the cylinders are similar we can declare these fingerprints are similar or not and experimental experimental results show that this algorithm is very effective and compare to other algorithms.

These are different and these are 4 different methods which we can these are 4 different methods by which we can combine the local cylinders into a global 1 and these are some other algorithms proposed by some other and f m r is false match rate.

These are not required niw why do you need these.

These algorithms are very effective.

That is your aim is to implement this 1 and whether it is effective they are nor not we do not care.

Yes sir.

Agreed.

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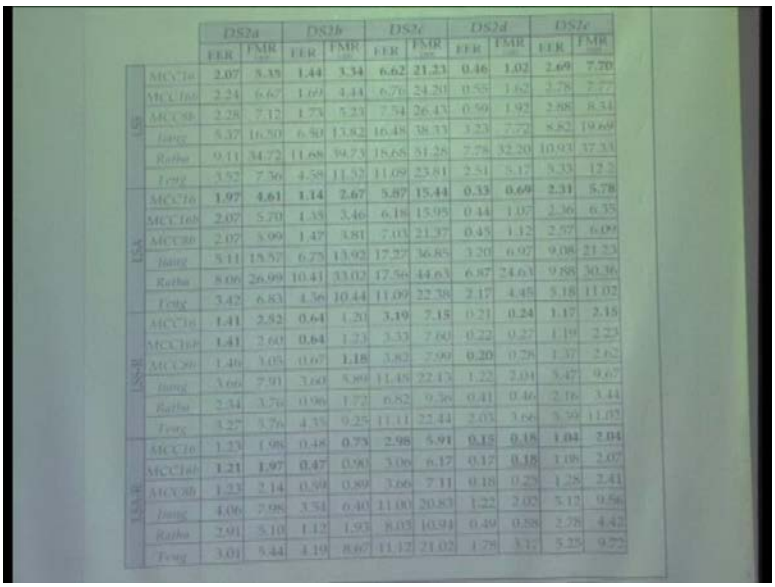

		DS2a		DS3b		DS2c		DS2d		DS1c	
		FER	FMR	FER	FMR	FER	FMR	FER	FMR	FER	FMR
LDA	MCC16	2.07	5.35	1.44	3.34	6.62	21.23	0.46	1.02	2.69	7.70
	MCC16S	2.24	6.67	1.69	4.44	6.71	24.20	0.55	1.62	2.78	7.77
	MCC9S	2.28	7.12	1.73	5.23	7.54	26.43	0.59	1.92	2.88	8.34
	Jiang	5.37	16.50	6.90	13.82	16.48	38.33	3.23	7.72	8.82	19.69
	Ratha	9.11	34.72	11.68	34.73	18.68	51.28	7.78	32.20	10.93	37.33
	Feng	3.52	7.36	4.58	11.52	11.09	23.81	2.51	5.17	5.33	12.2
LDCP	MCC16	1.97	4.61	1.14	2.67	5.87	15.44	0.33	0.69	2.31	5.78
	MCC16S	2.07	5.70	1.35	3.46	6.18	15.95	0.44	1.07	2.36	6.35
	MCC9S	2.07	5.99	1.47	3.81	7.03	21.37	0.45	1.12	2.57	6.09
	Jiang	5.11	15.57	6.75	13.92	17.27	36.85	3.20	6.97	9.08	21.23
	Ratha	8.06	26.99	10.41	33.02	17.56	44.63	6.87	24.63	9.88	30.36
	Feng	3.42	6.83	4.36	10.44	11.09	22.38	2.17	4.45	5.18	11.02
LDCP	MCC16	1.41	2.82	0.64	1.20	3.19	7.15	0.21	0.24	1.17	2.15
	MCC16S	1.41	2.60	0.64	1.23	3.33	7.60	0.22	0.27	1.19	2.23
	MCC9S	1.46	3.05	0.67	1.18	3.82	7.99	0.20	0.28	1.37	2.62
	Jiang	3.66	7.91	3.60	5.89	11.45	22.43	1.22	2.04	5.47	9.67
	Ratha	2.34	3.76	0.98	1.72	6.82	9.36	0.41	0.46	2.16	3.44
	Feng	3.27	3.76	4.35	9.25	11.41	22.44	2.03	3.66	5.59	11.05
LDCP	MCC16	1.23	1.98	0.48	0.73	2.98	5.91	0.15	0.18	1.04	2.04
	MCC16S	1.21	1.97	0.47	0.90	3.06	6.17	0.17	0.18	1.09	2.07
	MCC9S	1.33	2.14	0.59	0.89	3.66	7.11	0.18	0.23	1.28	2.41
	Jiang	4.06	7.98	3.51	6.40	11.00	20.83	1.22	2.02	5.12	9.56
	Ratha	2.91	5.10	1.12	1.93	8.03	10.91	0.49	0.58	2.78	4.42
	Feng	3.01	5.44	4.19	8.67	11.12	21.02	1.78	3.17	5.25	9.72

Yes sir.

So what is your time chart, thank you.

And coding will be mainly done.

Can you complete the whole task answer is yes or no?.

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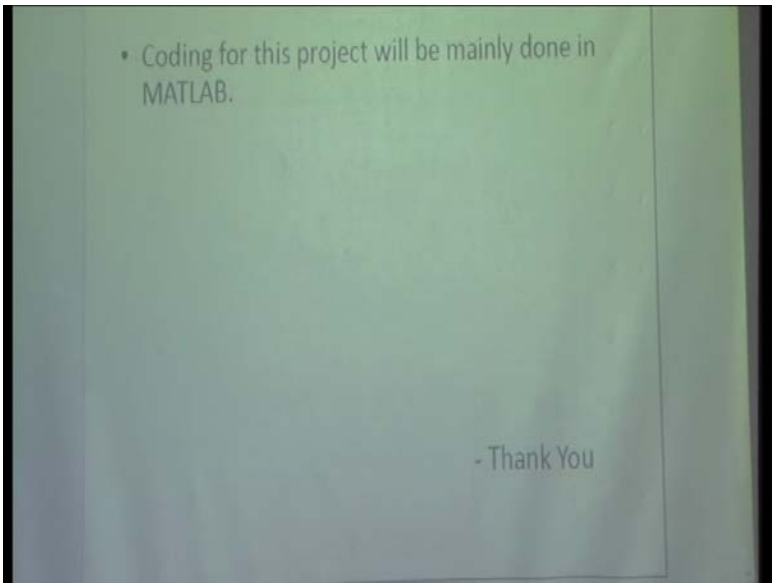

It is a very big 1 but, these papers sir algorithm as a total.

What is your plan see this time is very short 1 month in this 1 month how much you can do it.

I will be mainly calculating the t e s sir.

How can you complete without implanting the full algorithm.

After implementing the full algorithm.

So what i suggested that you start coding the minutiae cylinders, you code then you code the matching also and then.

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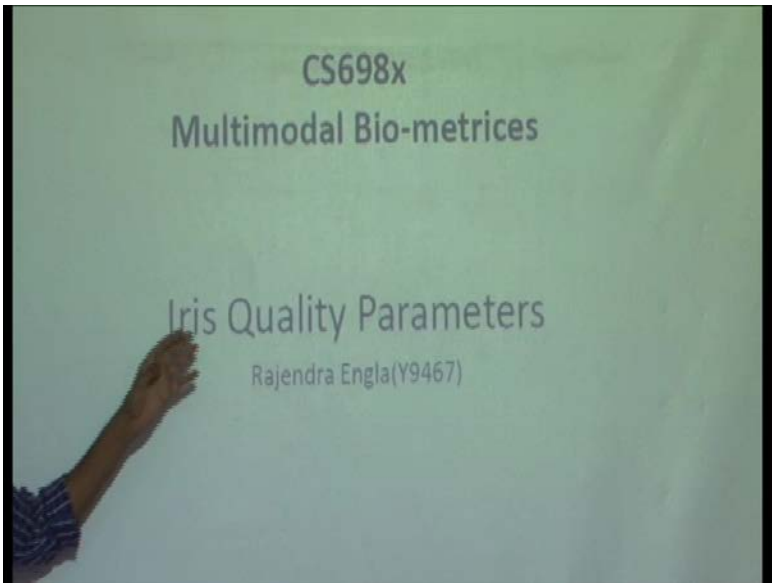

See my and distance between the when you do that much you should be correcting all those.

Yes sir.

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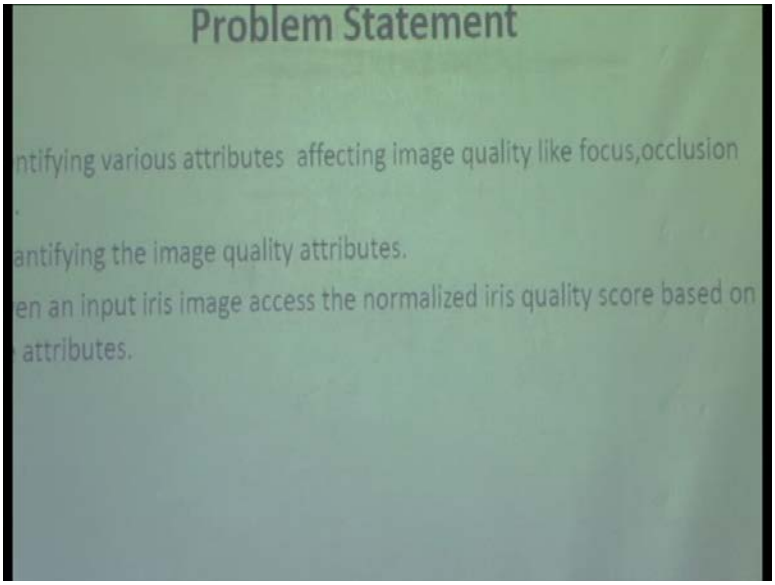

Because there are several issues will come now minutiae points. You are taking minutiae points very easily, you will get it most of the time what we observe there are 2 minutiae points so how are you going to handle those issues are there.

Yes in first 2 different images first 1 image.

Some of them are false.

We have to check if.

First problem for you that can you get because if there is a false minutiae points false cylinder.

If we have to if we have to only create only true minutiae points then.

Because using the false minutiae points you are in problem.

Yes sir.

Is it clear so first, look for the how to create minutiae points, how to create the cylinder and if possible the difference. So, I am writing down the first part is that you will be finding that true minutiae points.

These are the different attributes of image this is the process to estimate the quality of and first.

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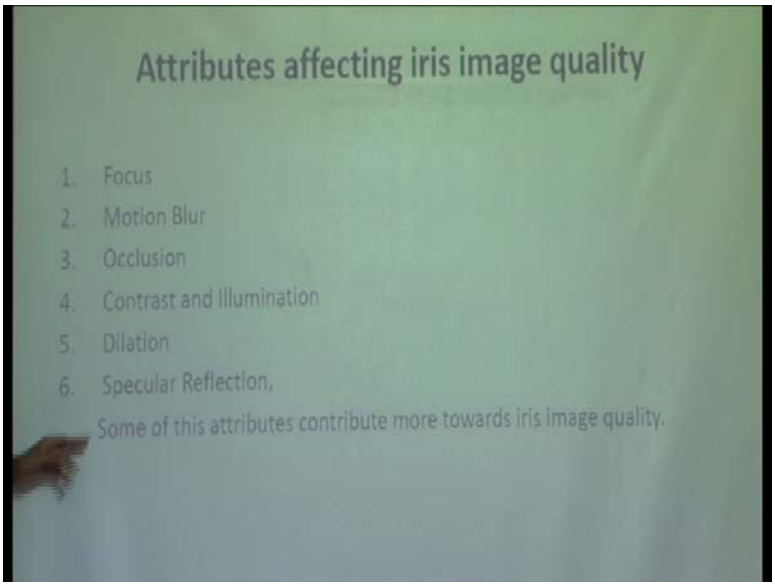

We get a input image, we segment it and based on this we assign a quality.

So what are the attributes.

Contrast and illumination dilation .

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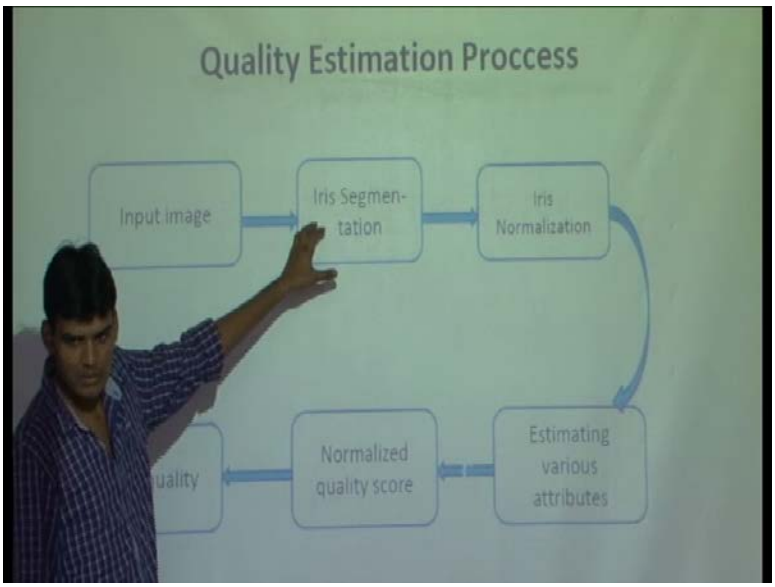

So the focusing image can be calculated by convolving.

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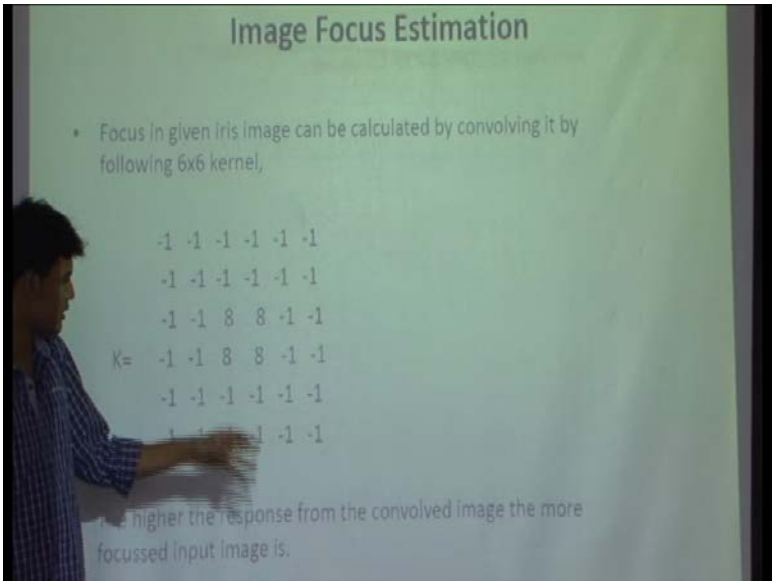

The input image with this segment and higher response from the convolved image much focus in the input image.

UT sir what i have suggested is that you get this but, you have to confirm 2 3 at least 2 3 more parameters and if you find something interesting want to change.

What I have given in 1 this is, which have something and the recognition part for recognition part you can score whatever but, for the quality you have to enhance this score these are the points. Where it is we are improving it that you feel that make the quality even better you are just showing that what you have write.

The output is the.

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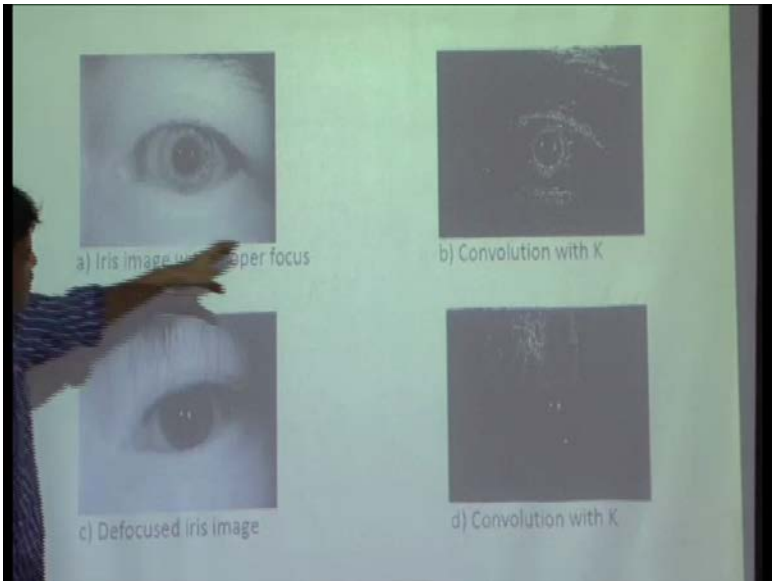

When you are taking the iris image then you should take only the .

No focus.

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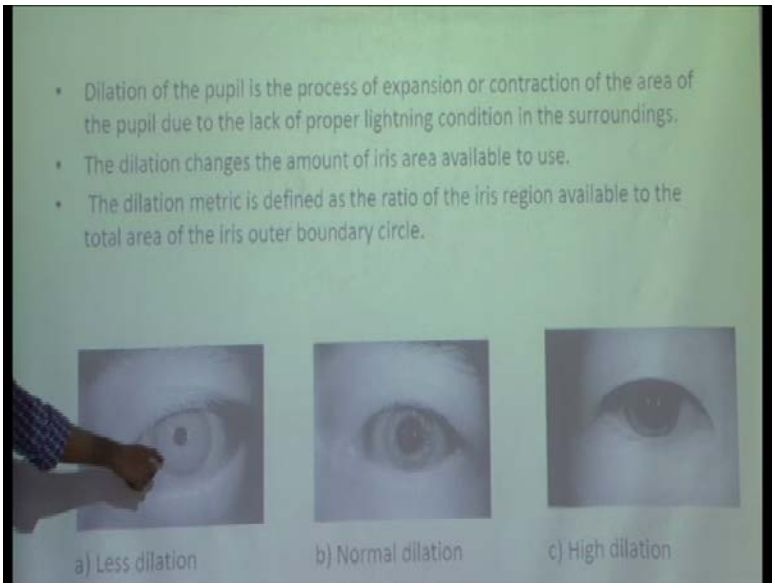

So that has to be studied and more over if you observe that why,why he has considered that mask sum is 0 mask. If you take that horizontally and vertically. If you so mask mask but, if you take the small .

Dilation distance in the radius.

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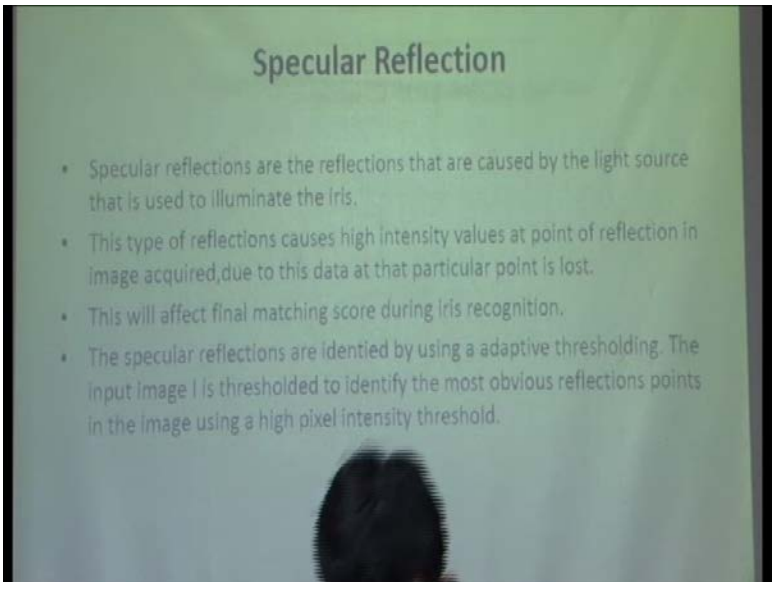

Whatever it is my sir, I have done it so that will not work out. You take our database all the parameters in we and where will be improving or and also you will be testing on is it and you will be able to do it after.

Yes sir;

So, good morning everyone,

So, my projected course is loyce. I recognition integrated scheme scheme, so basically there are that i will be taking because of reaching the normalize iris image. What I will be doing is i will be getting the segmented iris image. So, that will contain basically the inner radius and outer radius of the pupil and i will be removing the eyelid eye lashes and reflections from the image taken from the taken thesis by mister amit vandele. So, in that this is so that will mostly be the same but, now from the main part the author of this paper and daniel rego claims that they have that they are going to work for both any quality parameter that there is less less brightness less light and when there is accurate light.

So, basically I will be doing, is implementing this paper. So, this paper has got 2 the algorithm has got to run in 2 titrations first. They have taken a matrix that-that this method they are calling the local binary patterns. So, they are observing the local binary patterns by taking only the horizontal not the vertical that claiming that it will take less time if we only take the horizontal strips in local binary- binary patterns.

So basically the.

Yes you have you have the iris trips. I have the iris strip and only the yes, this is a binary number. So, they are classified into the histogram by only taking the horizontal strips out of it not they are not taking the whole matrix and titrating over the ah normalize iris image.

One is just whatever the another 1 is the no i want that 0 1 threshold.

Yes, I will be taking the strip and further to find the they are 2 algorithms 1 is local binary patterns and other is like binary large objects to distinguish the features like the there 2 types of features. They are must taking out first is local binary patterns and in that what they have done is a slight variation. Second is binary large objects in which they are applying the gaussian and gaussian to first smooth and smoothen the image and laplacian to find the edges better.

Yes they are like, they are finding the habit distance finally, what they are doing is taking the fifty percent if both the algorithm and then checking out that if they are also claiming that the difference in like. If you check only check by 1 algorithm then the difference between the 2 images come may comes out different but, the common thing but, if you add both the results then it comes.

So basically very good so can you do it.

Yes.

Good if you can do it it will be useful for us.

But like what I want to do, is because this, there was something like i have to checkout new things like checking. So, can i start from the do I have to remove the occlusion and all these or can i ?

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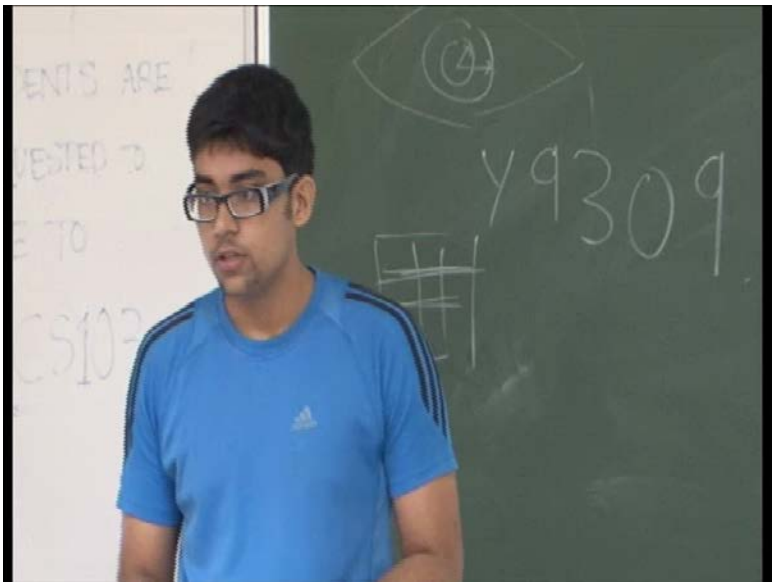

You have the segmented image whatever you want every image up to segmentation you have after that this paper starts.

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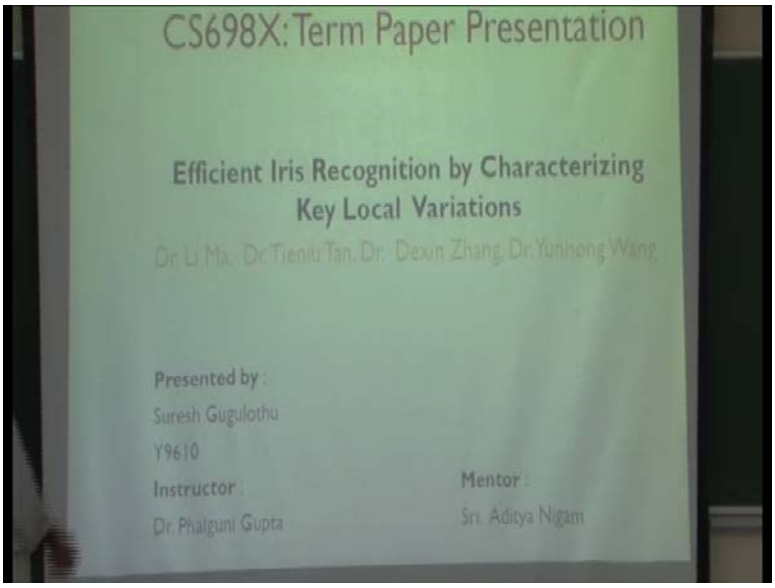

Good morning everyone myself, suresh my roll number is y 9 6 1 0 and today I am going to present my age of each iris recognition and the paper which I am going to effective iris recognition by calculating each of the variation from li ma and doctor tan tieniu tan and my mentor is sri aditya sir.

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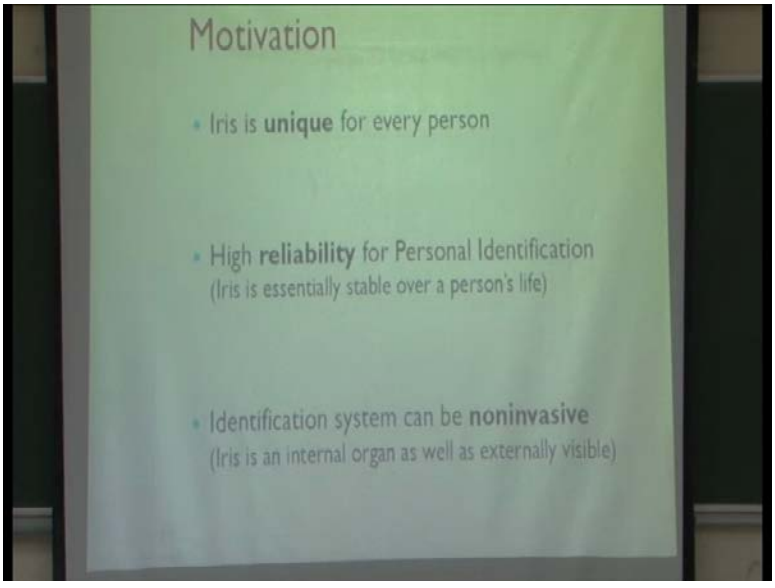

Sir recently iris recognition has gained its significance and after extracting.

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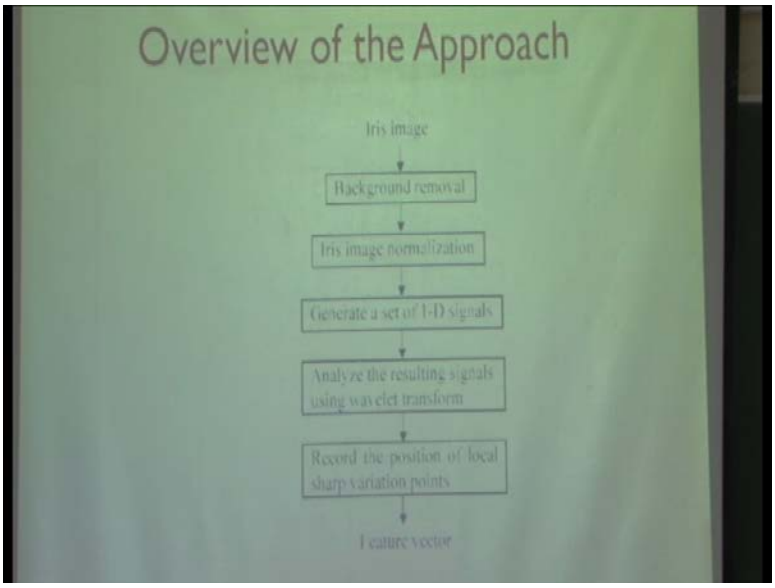

The feature vectors then the matching will be done using the two-step approach original. Feature vector is expanded into a binary feature vector and after similarity between a pair of expanded-expanded feature vector is calculated.

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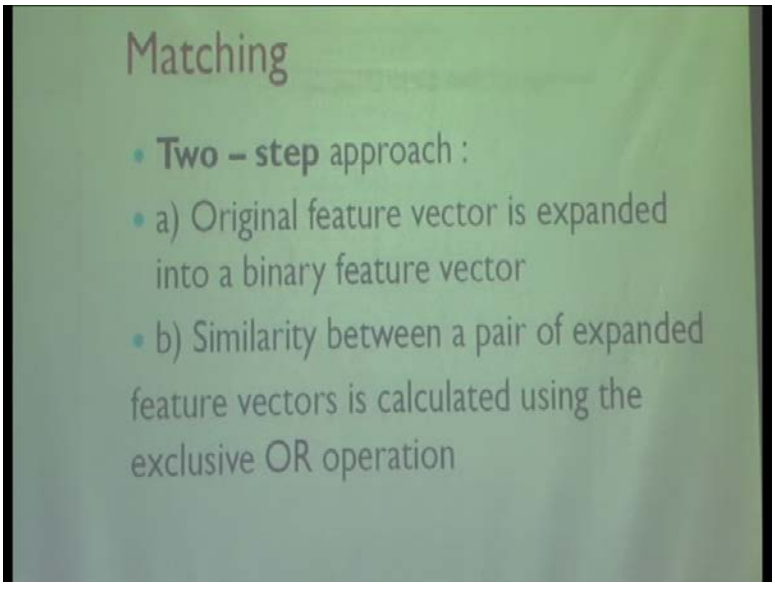

What you want, you want that after that you will be obtaining the binary the rotation part because of camera .

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My project is known force lab finger segmentation, I have given this image, I have to take out this part. So, this is something some code which i have already written, I will just explain about what i have written and what I have got so in this this inverted image and then i have just run as soon as they detect the intensity. I take it as a something like x 1 and as soon as I do not, I am not getting any intensity i get the next one.

So this is the code which I wrote and I got this 1 provided the orientation is straight.

So what you will be doing you are.

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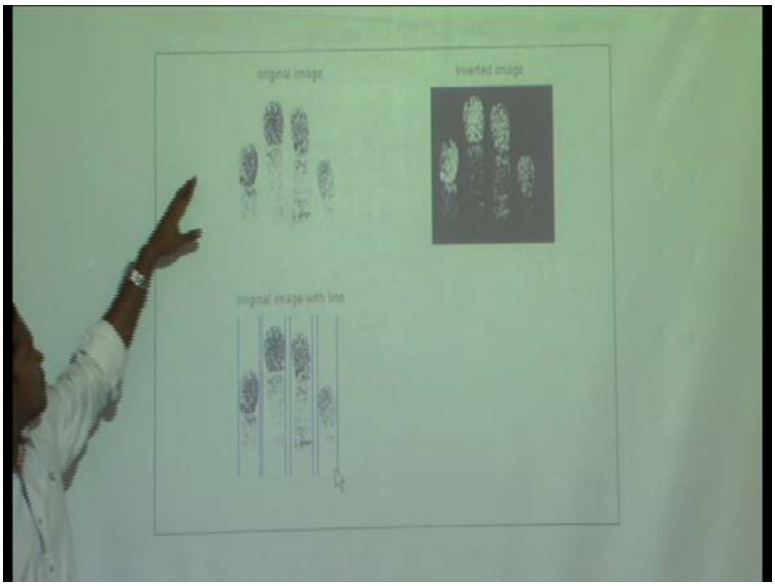

Intensity , I am getting and whenever i get a this thing. The image is straight like, if there is a gap between the fingers then if there is an orientation difference like if it hands is.

What I have said that you start with this and if it is orientation then we can calculate it and as we provide you with the that part but, your expectation will be something mean even this thing you will be writing it into the respected r o i that you want.

S, this is the 1 finger i have taken 1 finger and then i have that i can start scanning like this and then identify this so this is first point which i start detecting this graph over intensity value and this is the point of actual point where that the that nothing the point is coming but, this .

And if it is rotated by what degree of rotation you can handle see if it is a ninety degree you cannot do so the camera in such a way that it is almost so may be 5 10 degree so you have to ensure that but, there are some people i have seen their 1 finger is straight and other finger is you know .

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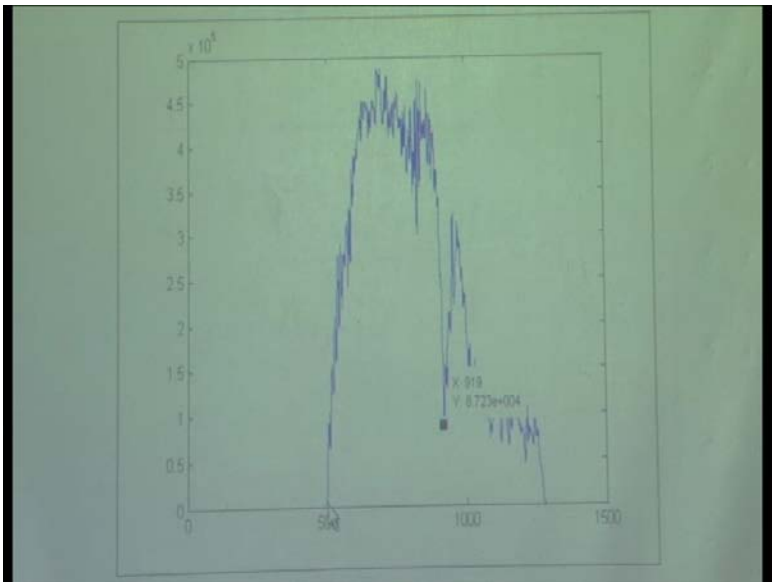

He has calculated the orientation of the hand but, you can do, you can find out the orientation of a finger using the same code prop it into, find out the local orientation of that finger and and then draw then find out the.

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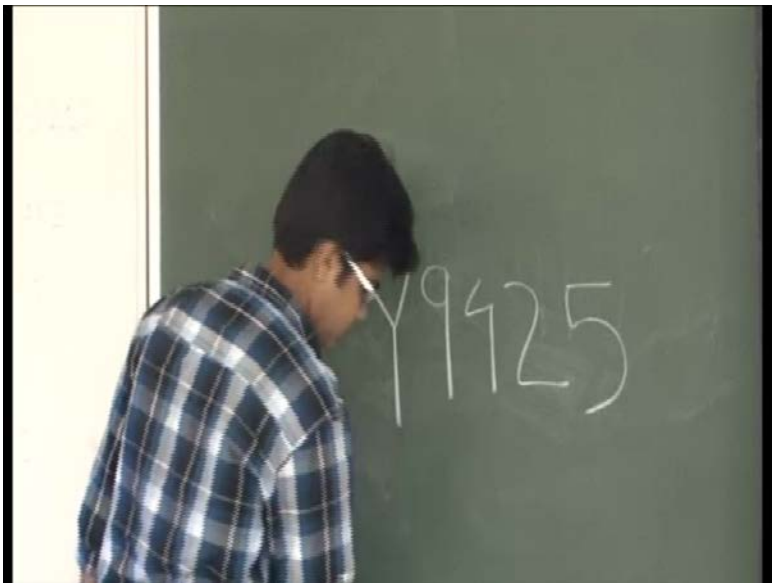

You can do it .

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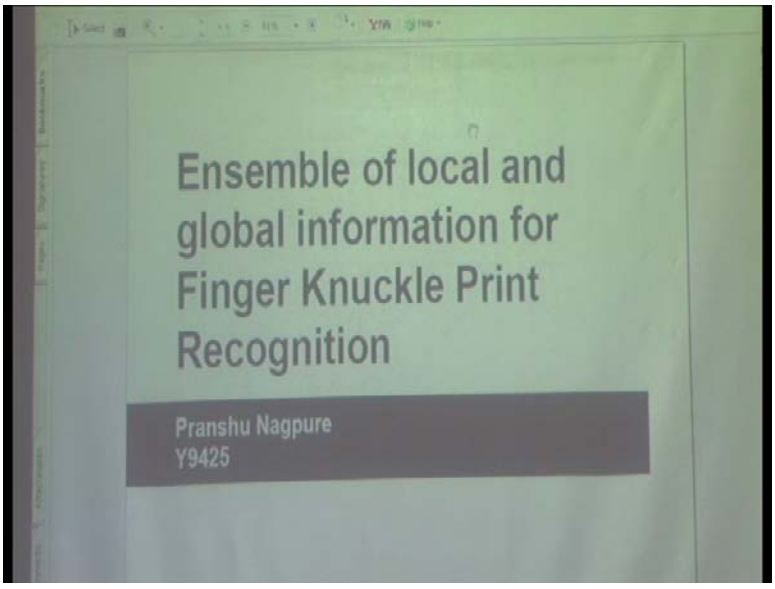

Project is finger knuckle print recognition and I will be using technique called as local and global information and technique is local and global information combination.

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Image acquisition r o i extraction feature extraction and matching .

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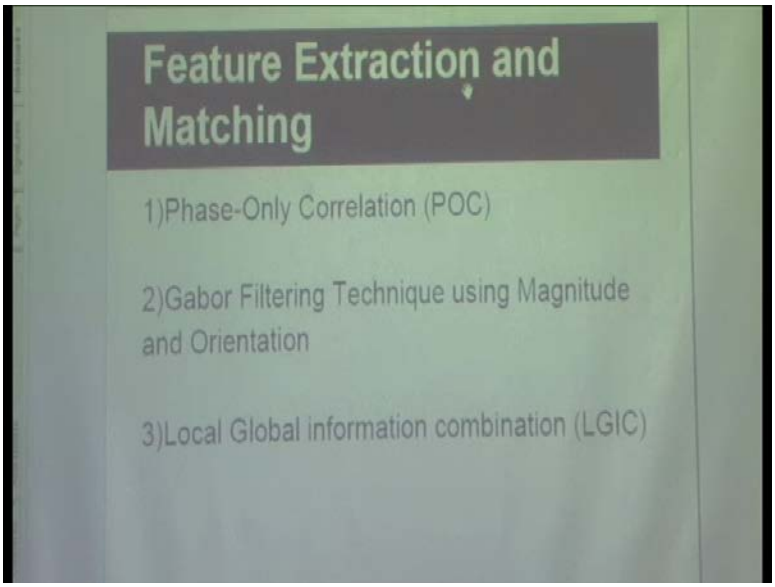

So, I will be starting from 3 and 4 and those 3 papers talks about these 3 techniques first is phase-only correlation and third is local global information combination.

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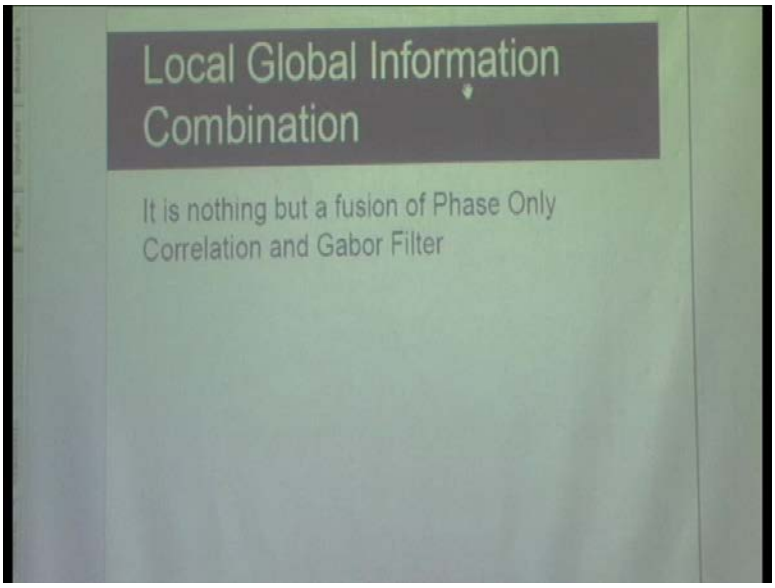

So, I will be doing the third, 1 and the third 1 is nothing but, a fusion of these 2 techniques basically by doing the fusion.

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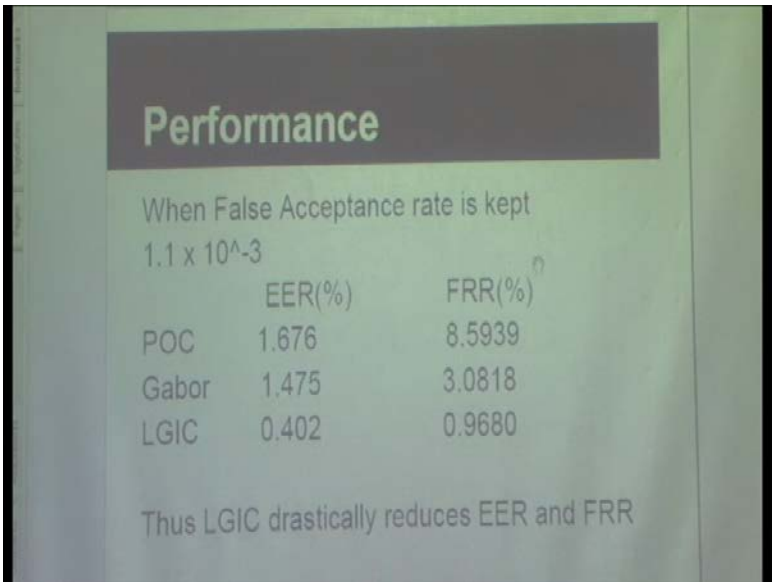

The performance drastically improves then the p o c technique .

It is not related to this with 0 point 4 when both of these are equal.

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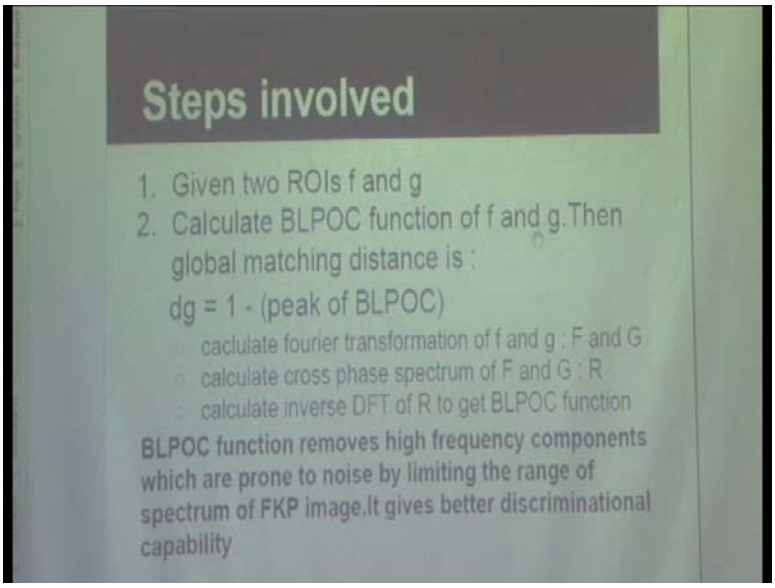

I will calculate the remove the high frequency components and which are prone to noise after calculating the b l p o c function the peak 1 minus peak of the b l p o c function and calculate the local matching distance and finally.

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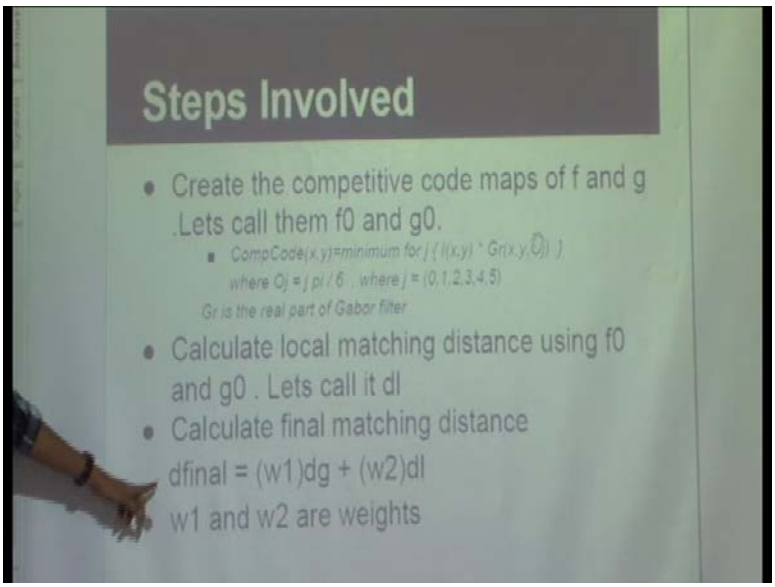

I refuse that I will be getting this final matching distance .Good morning all my name is rahul. I am doing my paper on for that i will be dividing my project in 3 parts first i will detect few candidates for the new step depending on their where for example, this is nose and point i am this point is p which is being considered and and this is the angle theta.

So, I will first sort out these candidates and then i will apply a threshold to reduce the number of candidates, because since nose tip all the neighbors will be energy, will be close to each other . So, that will be very small so based on threshold and then to get the final nose tip i'll ah i will use the nose area to determine how many candidates are lying there and then selected top 3 most effective energy pixel from there.

Nose area can be determine so all pixels lying in this triangle maximum energy I will select those and that will be the nose tip and if image has only a single then the nose to mouth line and the face boundary. So, i will calculate the maximum points from this this of this or if they faces same.

You know I do not know, how to give you the if i give you the camera 2 camera photo .

And most of them are face photographs .

You can even get this line also all those things are available and also the nose peak is there too. If I draw a line so you have to do something sp those information, I think I can give.

Hello good morning everyone, I am and I am on the topic, then we will be then we will do the feature we will extract the feature from the and then we match the feature that we have extracted out .

So after we have got very high-high range of intensity so basically .

That paper i have given other thing is that you are also scientist quality. So, that is why I have told you so you will have to come up with 2 3 4 at least parameter by which you can estimate 1 thing that you can also think of a once you got this representation can you, because you have the extracted r o i now you wanted to estimate the quality of this r o i but, ultimately you are using this for your recognition purpose and if you are suggesting telling something about the quality of this you are not using.

So, probably you can also think of that what is the quality of comfort. There are some some measures by this you can estimate the quality of the comfort. That will also provide you similar ultimately, you are using that to further recognition and it is somewhat derive from the original image but, instead that you are calculation 1 parameter can be the what is the quality of you all can think about it .

We have given them, so whatever that we can we can get from that which can be useful applicable here directly. I can say that occlusion of that iris will not be here bit will be like that reflection in iris. It is very different form different form contrast or the sharpness or the edges or the quality of the edges connectivity of the edges. So, all those things by which you can suggest some the quality of the .

Generally in high secure system, cryptography is used for secrecy and authenticity of the message but, cryptography codes are generally very long cryptography keys are long so and they are difficult to handle. So, biometric is integrated with cryptography to generate the keys, what I will be working on is generation of key from the palm print so, far work has been done in this field with iris but, this palm print the advantage that we have it. There are algorithm that make use of the values and the pitch in the palm to extract the region of impress so that we do not need to orient it before matching it with the existing samples.

So, what we need to do there are 2 things. First of all we need to extract the minutiae points from the palm print. So, we need to extract the principal line first and then identify the minutiae points from the minutiae points. We need to generate a feature vector this feature vector from this feature this feature. Vector would be stored as templates and from this feature vector we can get function to generate the key.

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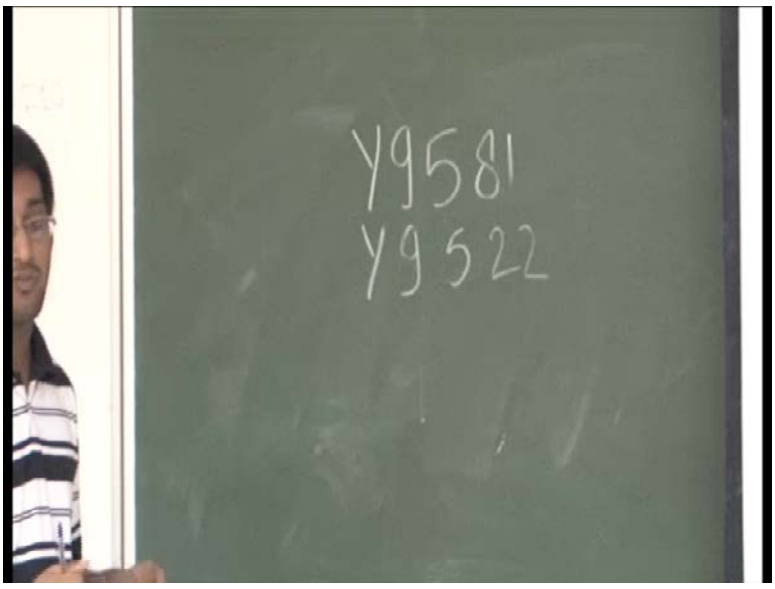

The function design should take into care that, that values even close to the original. Values can extract the committed values so for example, generally what for a small change in the string the hash e function, the hash e string is generally change by fifty to sixty percent but, what we need to consider here is that in the case of palm print the images will not be same will not be exactly the same.

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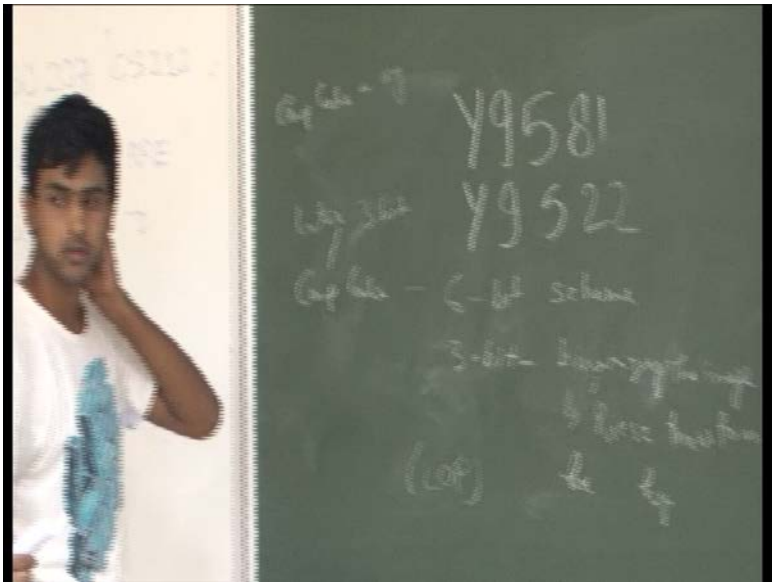

So, what we need to do is to consider is to take into account a function. Which can, which can handle both 2 similar images so for example, we can allow for 20 percent deviation in the-in the first and the second image of the person and then we can compare. So, the key produce by both the images should be the same.

So and apart from that the extraction of the minutiae points can be done by dividing the palm into 4 segments or or more segments and then build on this build on this parameter like me a pipe sample images of the palm print. We can use them by placing 1 image over the other image and them we can get a pyramid out of it to store the template.

Basically we have to generate the key using.

Why same thing cannot be done on fingerprint you should not tell that it is only true for palm print it is true for fingerprint palm print.

Yes.

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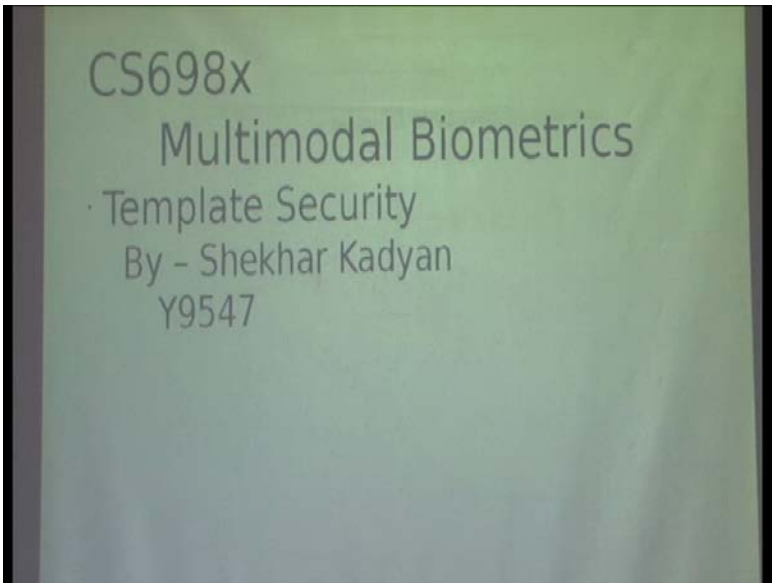

So there aggregating the biometric samples hard ware software and the various communication channel so there are number of ways in which introduce can come and take advantage of.

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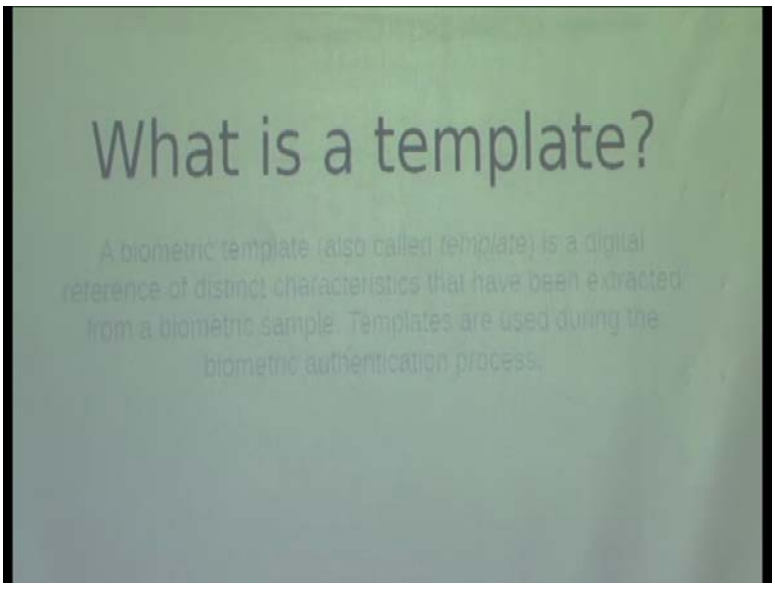

How are you going to get the?

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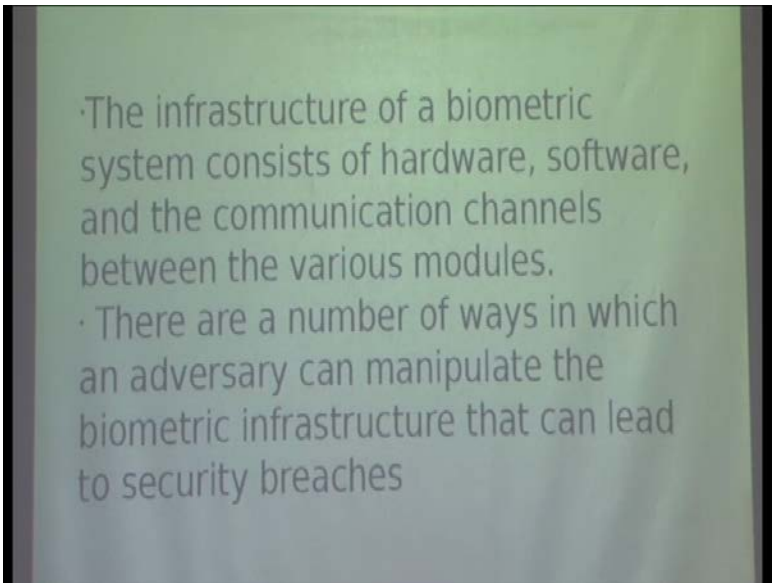

Good morning everyone, My roll number is this, I will be, it is based on my paper but, now if i.

Same size of that r o i that is not a problem.

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Then in some images so what I am doing is that i am trying some technique then getting this value but, parallely second thing.

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Which I want to do is that they have taken a summation and when they reach here. Now there is 1 more feature, which is contrasting in this area. So, why I am trying to take this intensity level of this and then taking a axis and from there calculating .

Matching the given image to.

So, from the face how are you going to do, because of this 1 percent is telling nose tip. I know exactly what way she wants to use that is clear because once , I know the from there i will use the distance parameter and then I will have the she is looking for remove it clean the board.

So what is given to you given the 4 separate fingers.

I have given the segmented.

Four separate fingers so you will be extracting the minutiae point from each fingers and then.

Apply matching algorithm.

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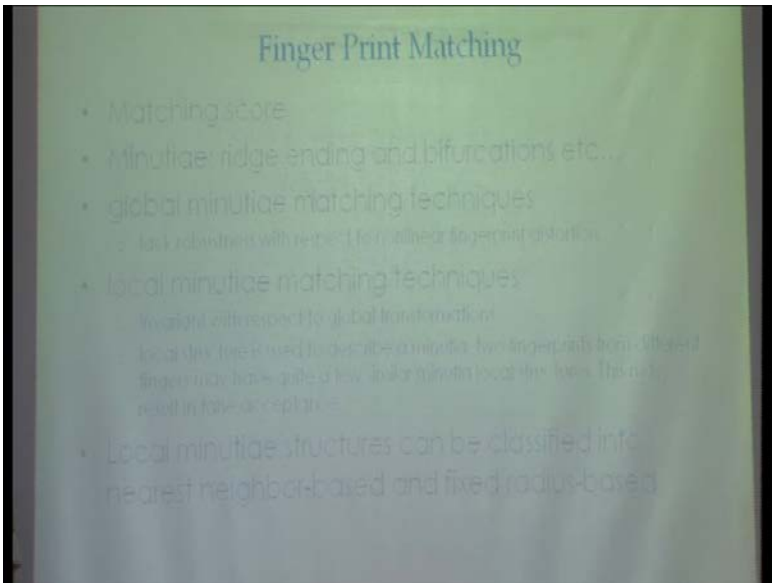

Are you going to consider the inner quality? No, and then you will be obtaining the matching score against each finger and then you will be adding them. That means basically what you want to know, you want to have the same matching algorithm on 4 fingers and am I and then you will be finding that what should be the .

So you fix up 1 so he actually said that he wanted to use all of them and except something from all of them that will be fine but, ultimately.

That will be the best one.

So that is good.

You can do it.

Yes.

Very good