Assignment 2-Face vs. Non-Face

Submitted by:Weerdhawal Chowgule

- In this assignment, we use Bayesian Probablity theorem to classify the testing face and background images using the prior training face and background images.

Outline of use of Algorithm.

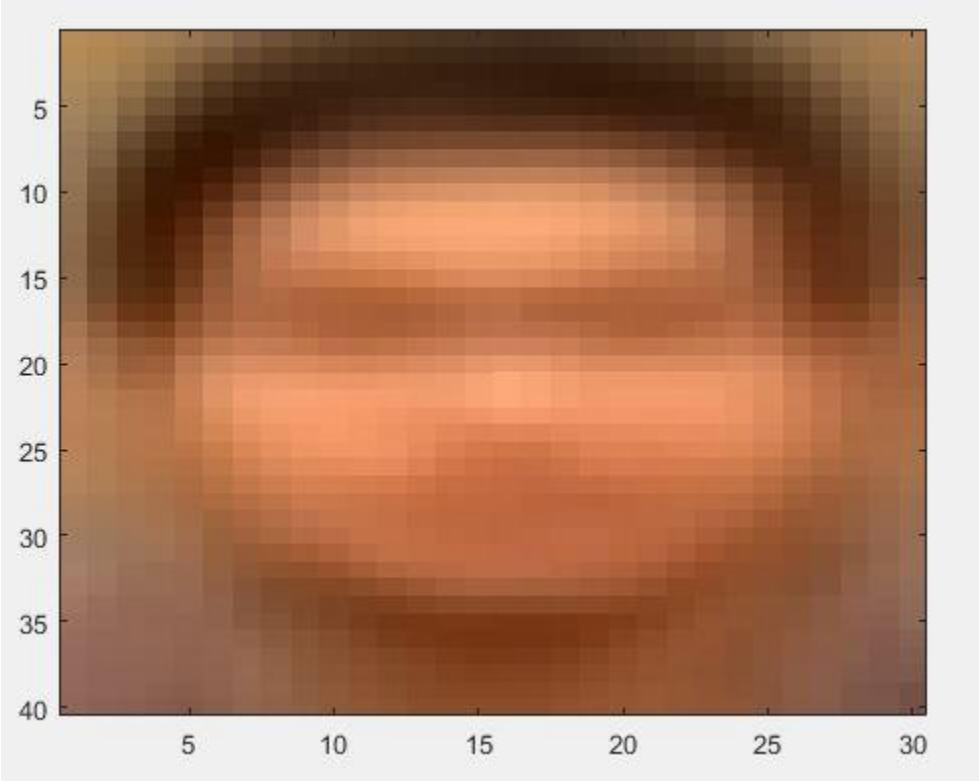
We input the resized image data set provided which is of the dimensions 40*30*3 which has 3 color channels. Next step is to convert this 3 dimention to a vector of the size 3600*1.Then using the theorem of Maximum likelihood we calculate the mean and covariance of the images and generated a model of the images which μ and Σ of the face and background . Next we compare these with the testing images provided and we calculate the accuracy.

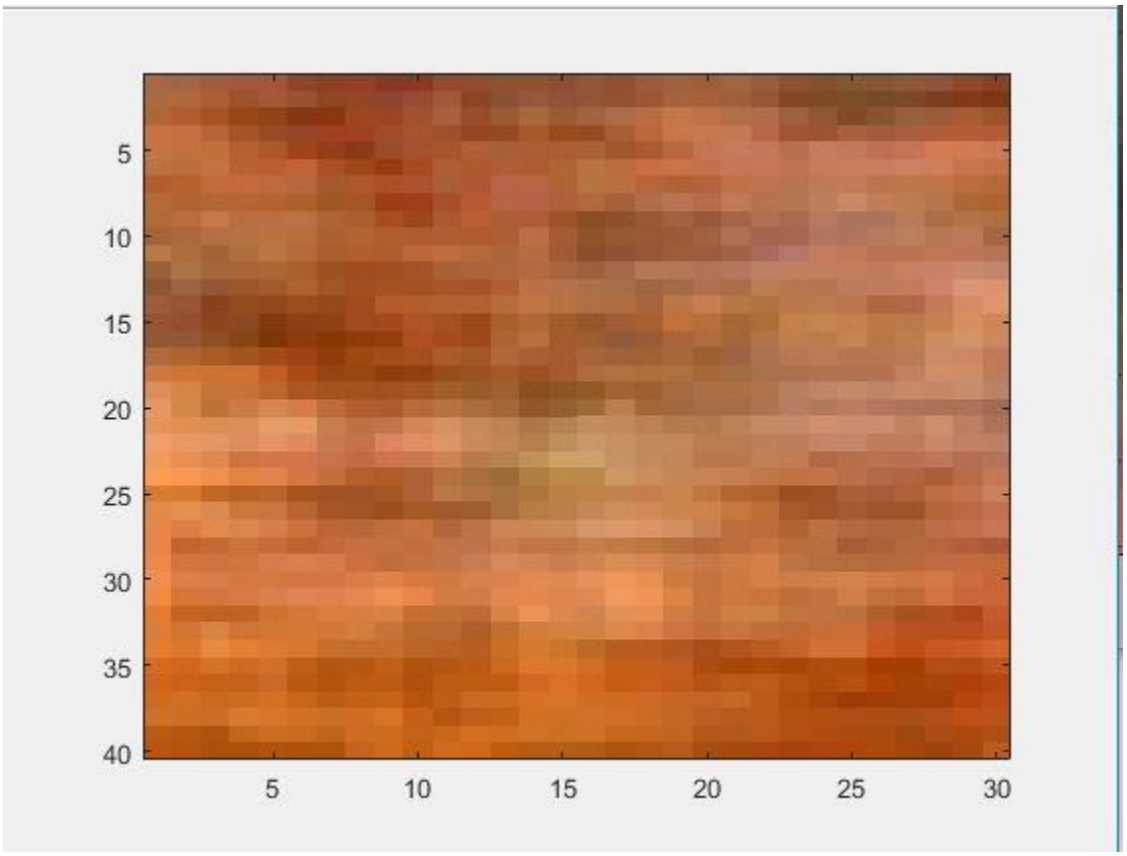
The accuracy results are as follows:

	R	G	B	RGB	HSV	Gray	YCbCr	HSVYCbCr	Gradient
Face(Training)	0.9402	.9402	.9348	0.9457	0.9783	0.9402	0.9565	0.9783	1
Background(Training)	0.8362	.6610	.5847	0.7062	0.8644	0.7006	0.9153	0.9181	1
Face(Testing)	0.6897	.7974	.9052	0.8276	0.9009	0.7888	0.9181	0.9052	0.8922
Background(Testing)	0.8316	.6968	.6206	0.7376	0.8369	0.7394	0.8599	0.8723	0.9965

RESULT IMAGES

1:RGB

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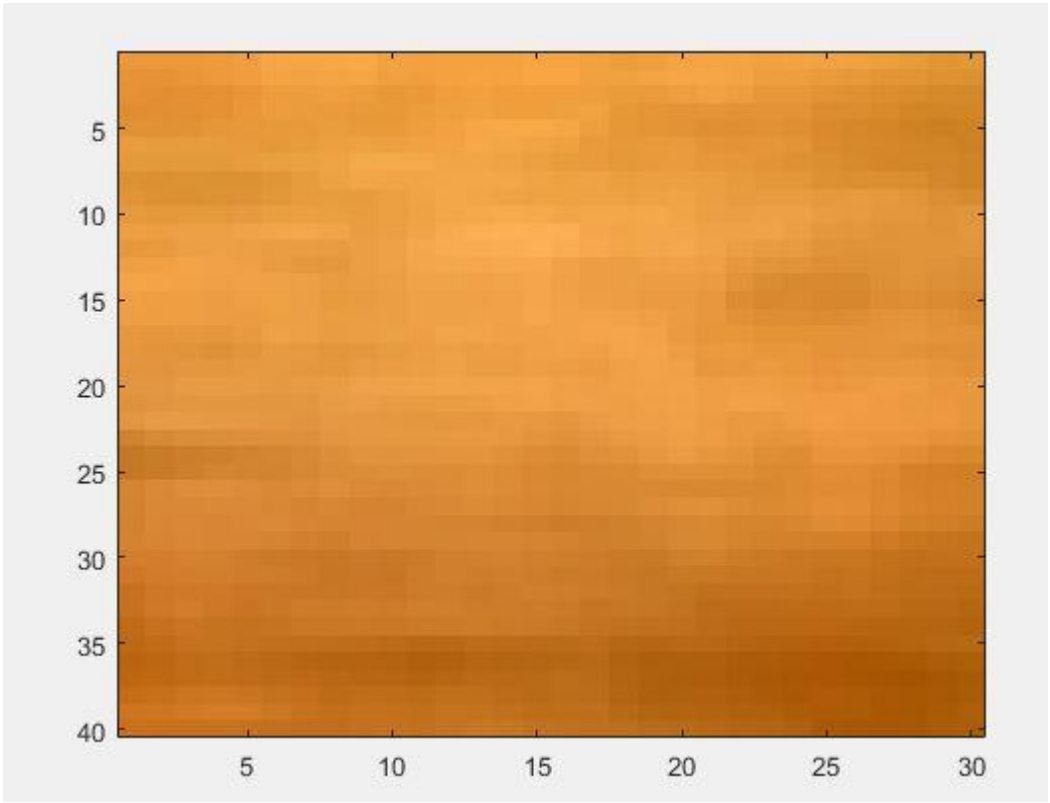
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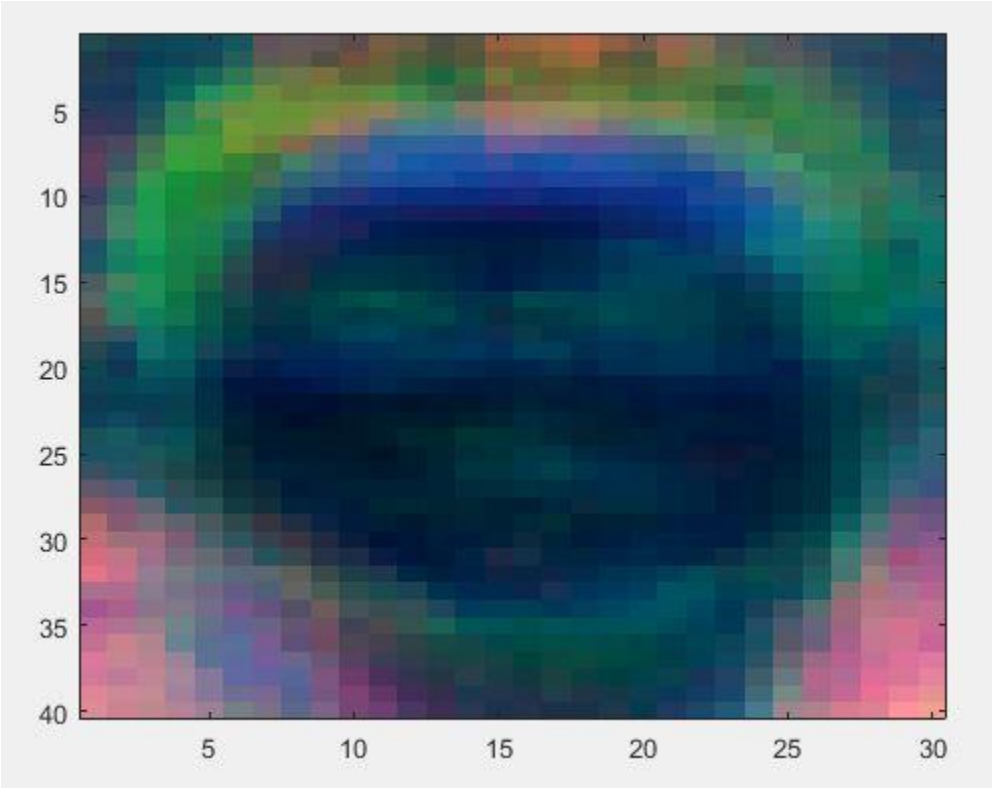
2:HSV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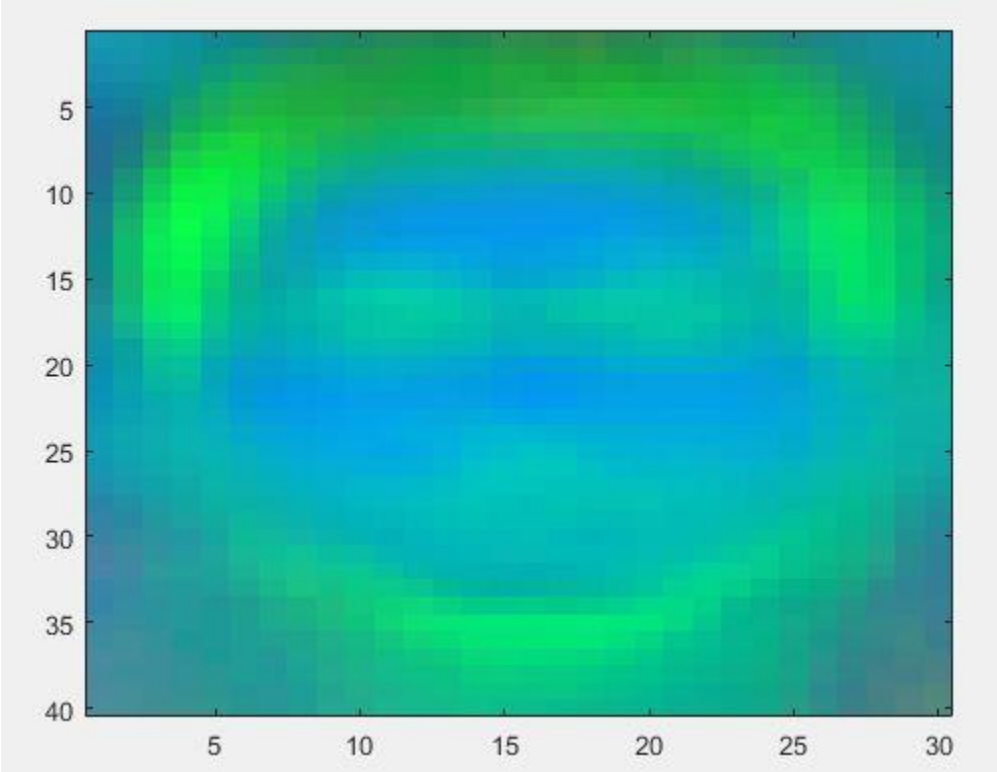
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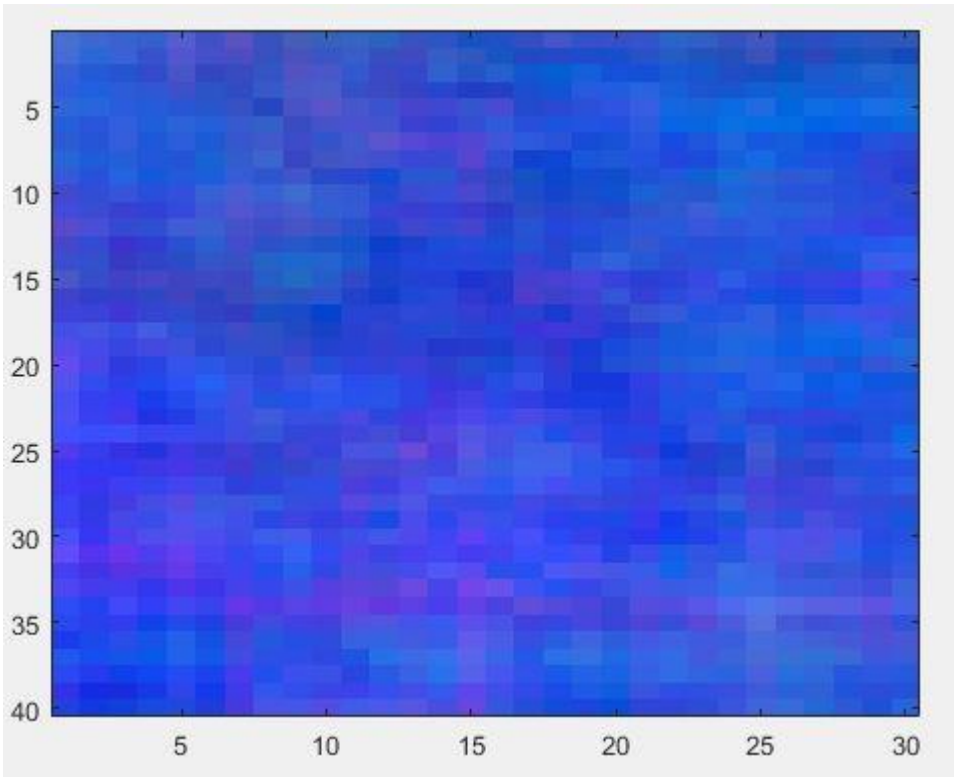
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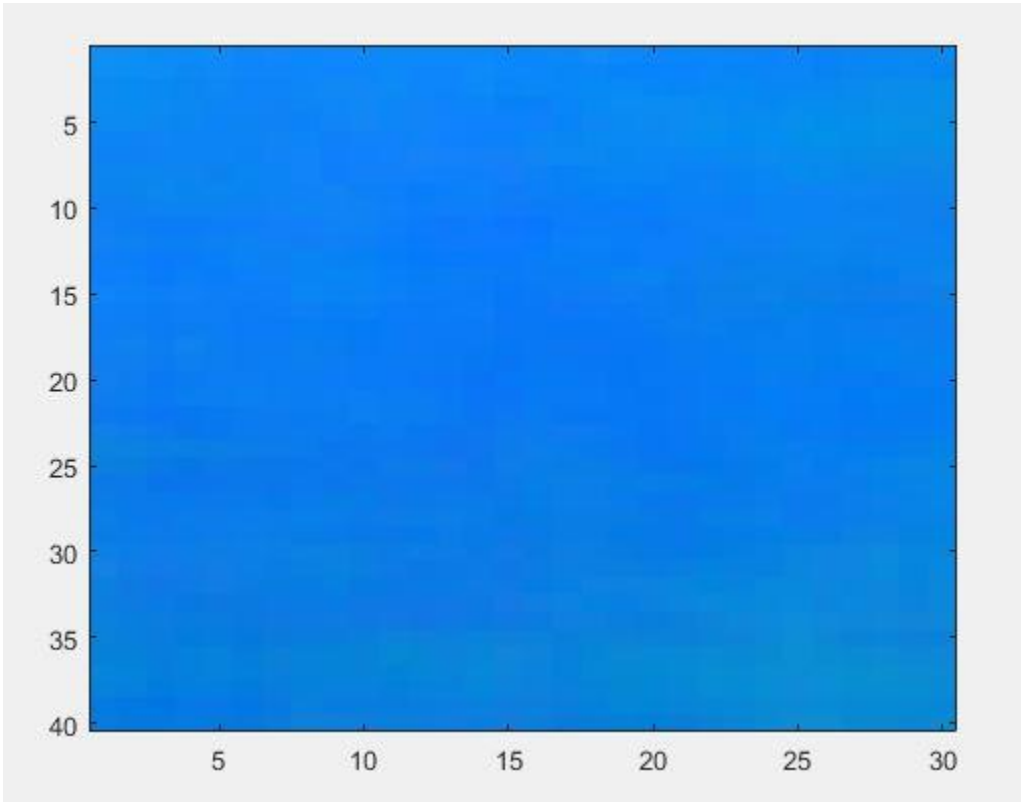
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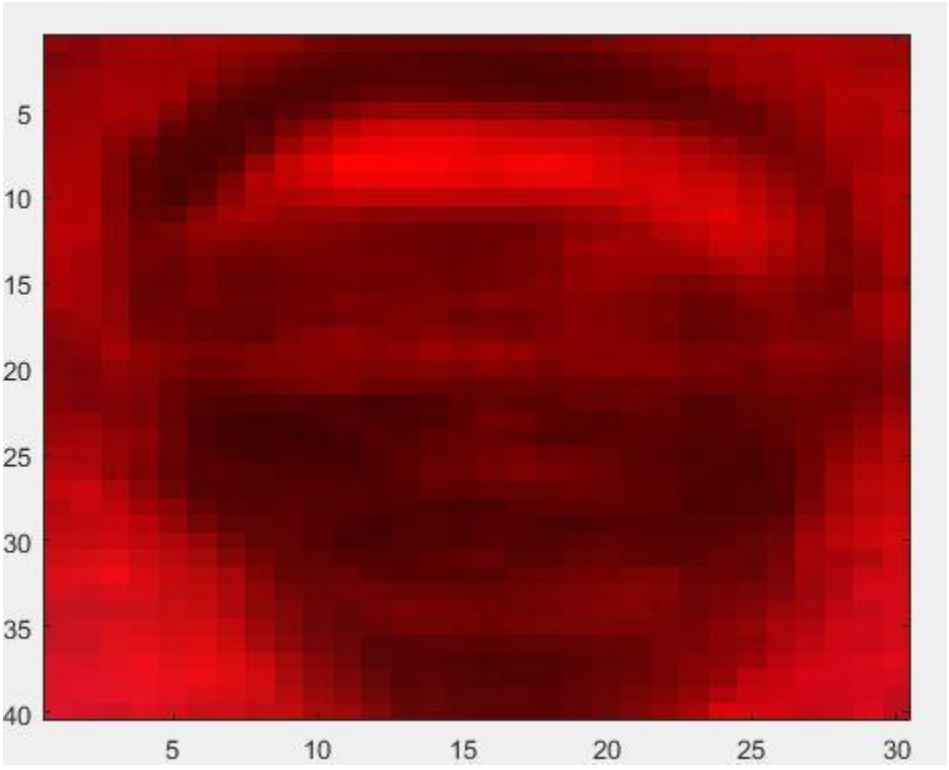
3:YCbCr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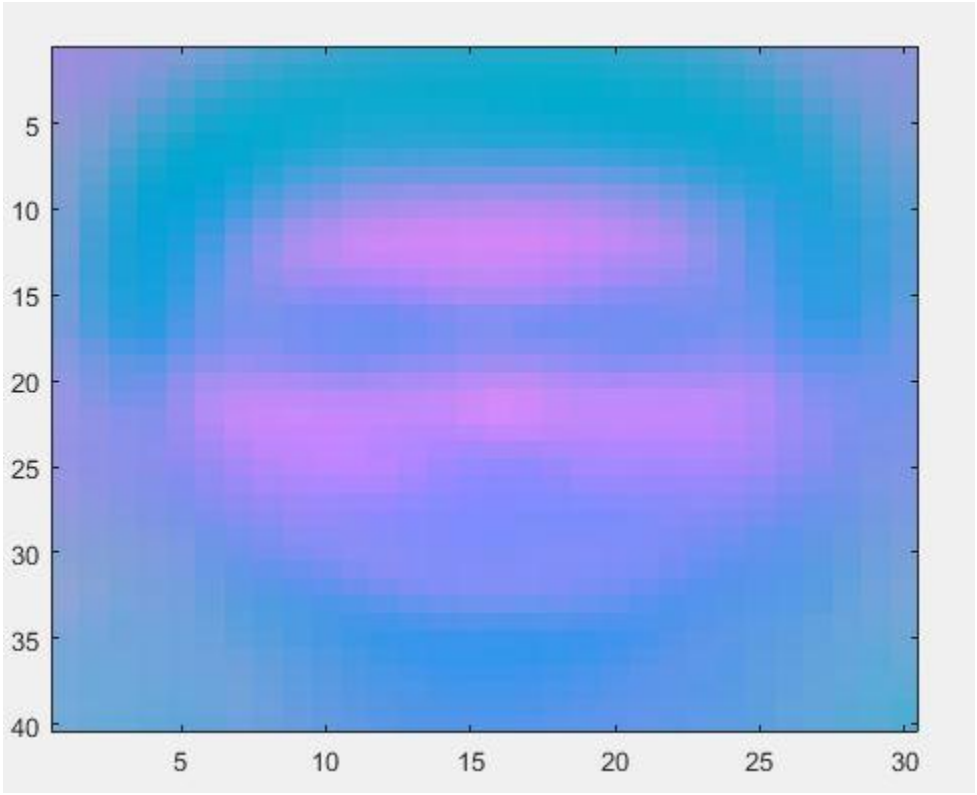
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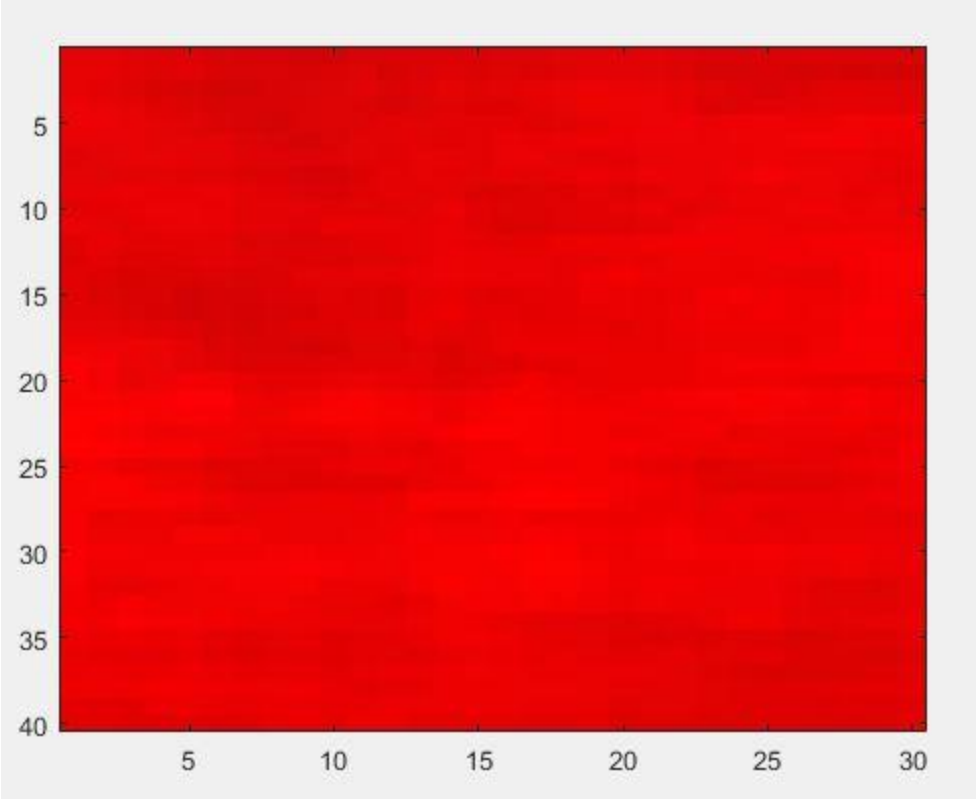
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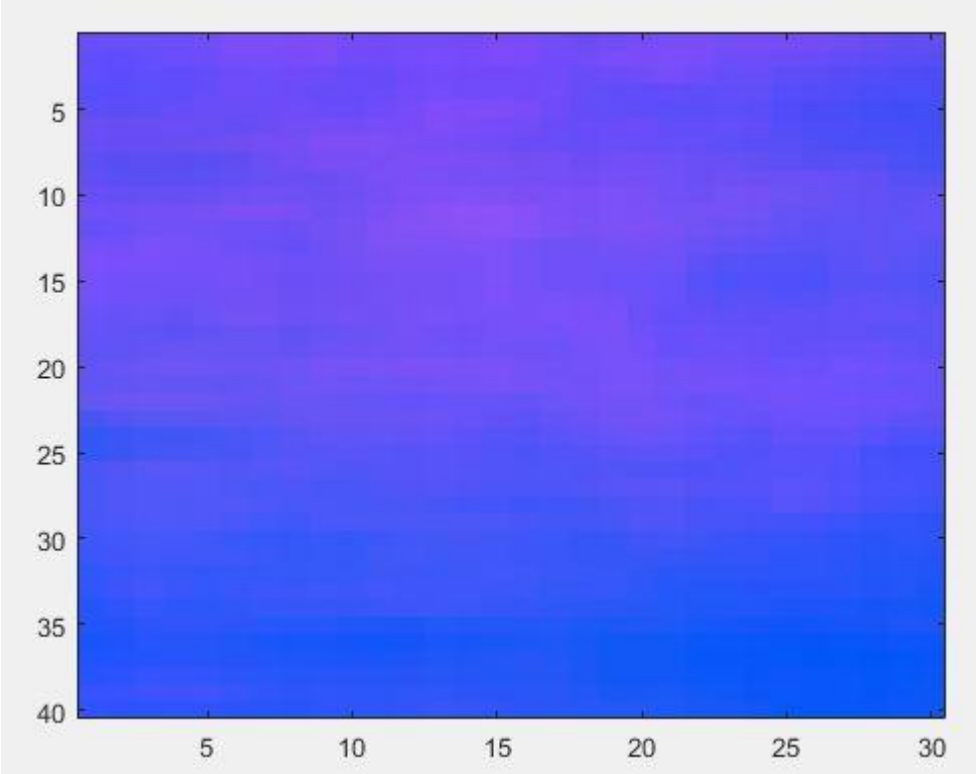
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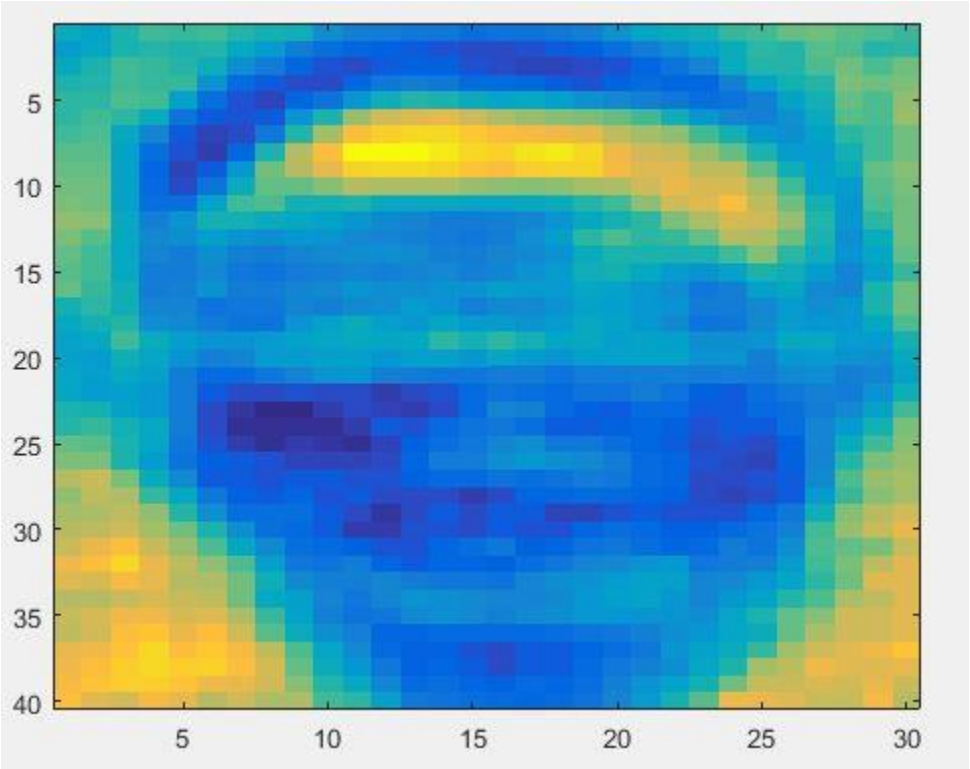
5.Gray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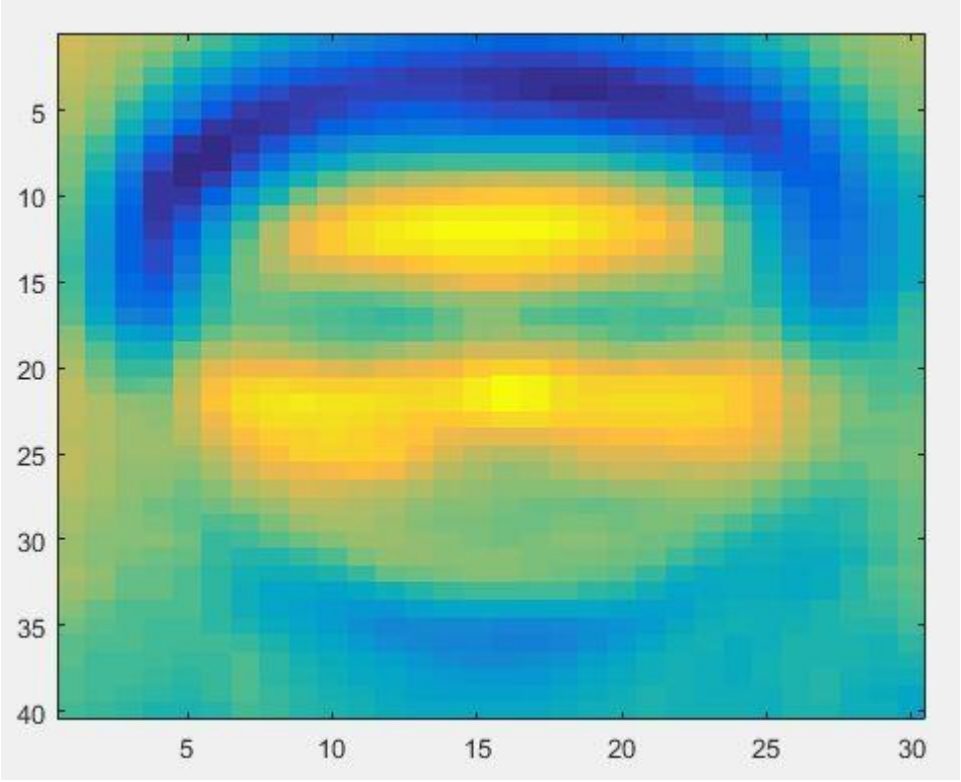
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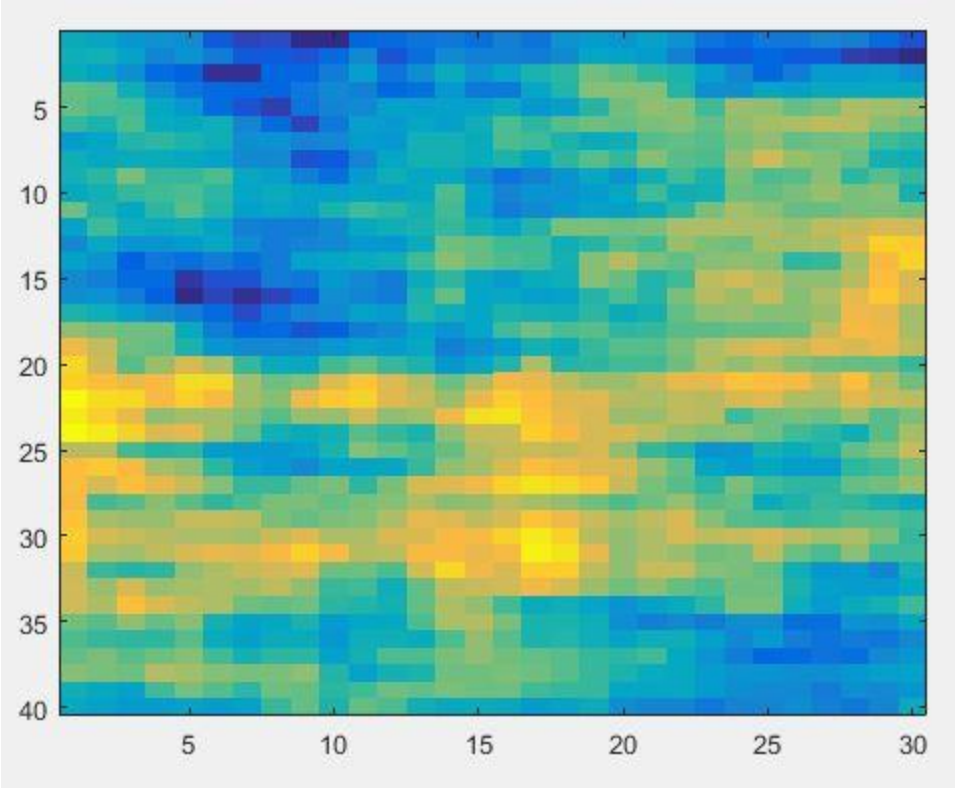
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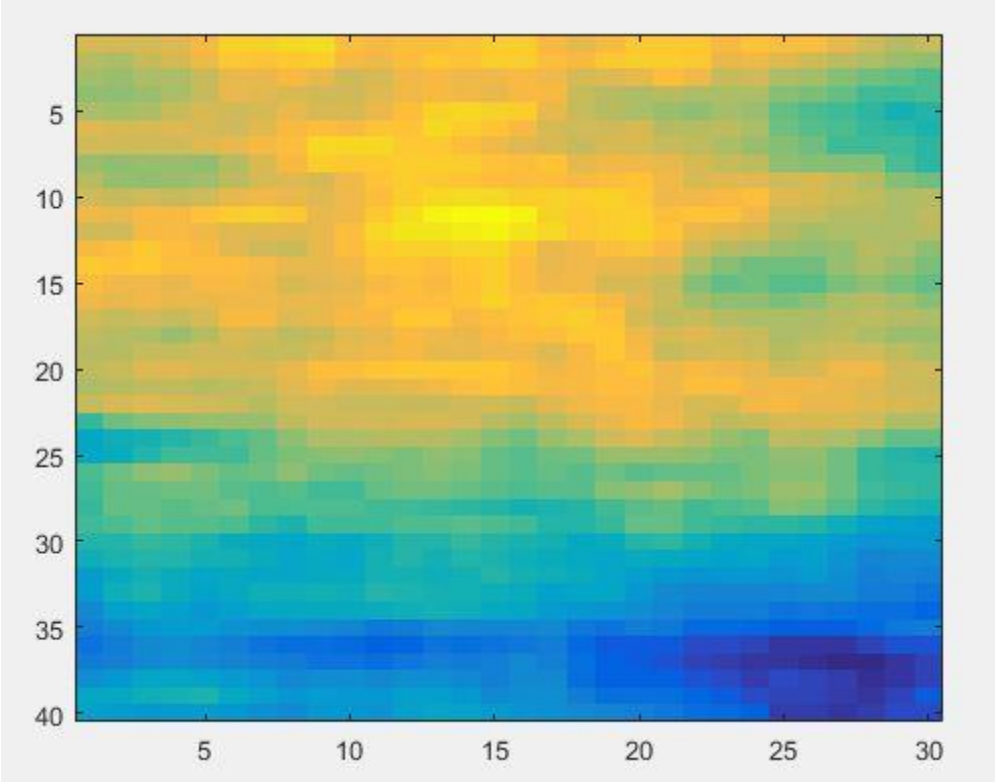
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