

Figure 7: Graph of Shannon

Image Name	DWT Family	PSNR	MSE	NC
Lena	rbio1.3	67.6848	0.097914	0.99219
Penguins	rbio3.7	68.5806	0.098113	0.99219
Pepper	rbio4.4	57.8572	0.16406	0.99224
Smile	rbio6.8	60.8635	0.13853	0.99218

Figure 8: Values of Reverse biorthogonal

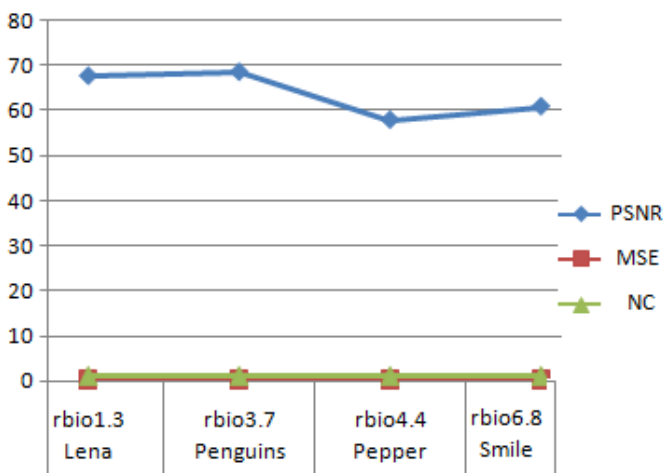


Figure 9: Graph of Reverse biorthogonal

All the above figures represent different DWT wavelet families which are coif let, Shannon, Reverse Biorthogonal. It shows the results of different images. We applied n-types of functions of each wavelet family on many images. It obtained the unique values of PSNR, MSE and NC which are shown above.

### 7. Conclusions

The DWT function of a two-dimensional signal has got the ability of implementing the embedding and extracting systems for the approach of the invisible watermarking technology based on two significant operations, encoding and decoding procedure. It is clear that which image will have the greater value of PSNR that will be more robust. On the basis of these values, it is concluded coif let and reverse bio are more robust as compared to Shannon because it gives the best PSNR value results. To sum up, coif let and reverse

biorthogonal are more compatible DWT family members for watermarking technique, which gives better results.

### 8. Future Scope

The future research work can include bar on the size of the image that if the size of the image is very small, how much amount of data can be watermarked to it. The future aspects of the research work might involve optimization algorithm like BACTERIAL FORGING OPTIMIZATION to optimize the embedding procedure. The other enhancement in the current research work could be use of GENETIC algorithm to reduce the irrelevant bits where the data has to be merged.

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