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Better Signal Processing Algorithms

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Abstract: The following paper comprises of better signal processing algorithms
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1. INTRODUCTION

The following algorithms were found to be working in an experimental environment with better efficiency.

1.1 Achieving efficiency in computations

1) Please find attached new algorithms proposed for all function mappings and matrix inversions. f(x) is compu acclaimed inversefft(f(fft(x))). Matrix inversions tailoring elements belongs to least important values in gaussian distribution.

2) In quantization of signals, practically it is advisable to take errored signal of the lesser valued than the value as constructed. The reason being intensity reduction is naturally acclaimed.Intensity increase amounts to snooping or manipulations.

3) In specifications where output signal amplitude reaches beyond permissible limits, it is not going to destruct the system. This time taken is the scale to reac14Infinity.

4) In signal data diversification where we do diversification for lesser noise in data, the unaltered value happens to be 0 if strong zero or 1 if strong one depending on vlsi fabrication. This has very little noise in the system.

5) In a function provision should be made to introduce changes in newer implementation of functions which are exponentially going to bring down computation time.

6) Mathematical analysis of imaginary component implication: No calculation computed when in imaginary value. Calculated value also informed from imaginary component after the time lapse.

7) Kernel SVM implementation Initial clustering assigning in SVM classification should happen with the wrong classification assignment to achieve better classification.

8) If two points are connected indirectly if there is a possibility of an energy transfer between these two points there is going to be a direct energy transfer between these two points.

9) Sampling frequency of human ear is 4000 Hz. The value of signal at a distance of 1/4000 Hz from a signal 't' seconds from origin is highly correlated and correlated at its maximum value at this point.

10) In signal processing if the input is predicted at the output it is going to increase the speed of operation of the processor. The input reaching the output should be with minimum noise s maximum length of transmission line is necessitated

11) There is always an uncertainty from what sumed and what actually is.

12) The transmission line waves are assumed to carry current with minimal frequency. This current carrying waves produce magnetic fields surrounding the transmission line waveguides. The transmission line waveguides are null below a threshold and never attenuate beyond this cut-off. On analyzing this attenuation in terms of magnetic field generated we see that the magnetic field produced changes direction at this cut-off frequency threshold.

13) Analysis of Image forgery detection mentioned in the reference the algorithm is extended to speech forgery detection. Image and speech are considered identical with a different base and cardinality of base. Image is considered to be in two dimensional basis. Speech is considered in a different three dimensional base. All functions in the previous work are mapped and approximated into 3 dimensional base.

14) The following model is proposed to overcome shortcomings of the work proposed in Neural network modelling of color array filter for image forgery detection using kernel method. Model the shape, its dimensions, color and few more attributes (which can be learnt as required) and find a relation between these features using different neural networks and other classification methods like Support Vector Machines When the wavelength of light is comparable to the dimensions of an object - the object cannot radiate that color.

When the wavelength of a light illuminated matches with that of the object being considered (1D case is taken for simplicity), this light (with that frequency) cannot illuminate that object and so that object cannot hold that color. When this is extended to higher values for the length (i.e in centimeters for example), the object cannot illuminate that color.For red, the mid point of the wavelength band is 700 nano meters and so a stick of length 700 cm cannot radiate this red color being illuminated. This relation becomes complicated for 3D objects and still more complicated when they are of different shapes.

15) The random initialization of supervised learning methods is to be done in the opposite way of what actually the classification is. This is done to make sure that learning happens and we achieve a better classification rate.

16) All the intensity levels in the given image are quantised into 4 different linear quantisation levels. All possible shapes which might appear in the image data base are classified into 12 plausible shape data base. The match happens when (shape data base, quantisation level) pair matches exactly.
Total number of possible output points is (12! + 4!)/(sum of n terms till 12 + sum of n terms till 4) which equals 130636800.

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Equations:
1)

1. Assume the transformation a->a'->b'->b
2. Initial function map achieved f(a) = b;
3. A value measured can have errors due to computational limits.
4. To avoid errors from getting transmigrated to output we invent noiseless functions in the above manner.
5. Experimentally the input image matrix values extracted taken as 'a' is mapped using neural network as a nonlinear transformation to the weight vectors. These weight vectors are considered as a'. They are then mapped to output values which is the transformation function which are then dimensionally reduced to classification values as kernel LDA.

The transformation in the considered work (1) can be looked at in two different ways.
Take the weights of the first phase of transformation and use them for dimensional reduction. This leads to lot of redundancy as seen in LDA where only one variable remains out of 34 variables. Second. Take the weights of transformation from the full neural network where we see more elements as output of this function. As seen in the output there are lot of redundancies in calculation in this case. More the redundancy more the error incurred from the calculations.

2)

1. The covariance matrix computed is taken for analysis. The multiplication factor is always lesser than 1. This validates the second statement.
2. we infer if the multiplicative factor is more than one there is a manipulative code.
3. The 1x34 variable containing matrix is quantised into 1x1 matrix. The magnitude of the resultant vector is smaller than that of the input vector of size 1x34. This is evident from the noise to be attributed.

3)

1. The signal transformation in logsig function implies to any value of input signal in terms of time.

4)

1. In the discriminant analysis the most significant vector is unaltered. This is evident from graph theory.

2. ACKNOWLEDGMENTS

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3. REFERENCES

[1] Vinoth S, ES Gopi, *Neural network modelling of color array filter for image forgery detection using kernel LDA.*