1. **Entropy measure:** Entropy is a measure of the uncertainty associated with a probabilistic experiment.

1. **Aggregation Operators:** Aggregation operators are mathematical functions that are used to combine information. That is, they are used to combine N data (for example, N numerical values) in a single datum.

where is the weigh of corresponding .

where ; .

Where and is the weight of corresponding .

**3. Vector Norm:** Let a general vector norm is defined as:

where, is the norm and is the norm infante.

**4. Mathematical expectations (Expected values):** For a general (not necessarily non-negative) random variable

; where, and .

**5. Moment-generating function:** The moment-generating function of a random variable is

**6. Global Maxima and minima:**

and .

**7. Fourier Transform and Numerical Mappings:** To extract features based on a Fourier model, we applied the Discrete Fourier Transform (DFT), the DFT of a signal with length , at frequency , can be defined by Equation

where, .

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**7. Wavelet Transform and Numerical Mappings:** To extract features based on a wavelet model, we applied the Discrete Wavelet Transform (DWT), the DWT of a signal with length , at frequency , can be defined by Equation

**8. Wavelet coefficients:** To extract features based on a wavelet model, we applied the Discrete Wavelet Coefficients (DWC)

and .