

INFORMATION THEORY AND CODING

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Information theory is concerned with the analysis of Communication System, the purpose of which is the transmission of information from one point to another. The various parts of the communication system consists of a source which produces message to be communicated, the transmitter converts the message in to the signals for transmission through the channel, the channel is the medium over which the signals are transmitted, the receiver extract the original message from the output of the channel for delivering to the destination. The theory is an attempt to construct a mathematical model for each of the parts of the communication system.

C.E. Shannon an electrical engineer published a Paper in 1948 'A Mathematical Theory of Communication ' which gave birth to this new Discipline. In this paper the concept of production and transmission of Information was defined quantitatively by Shannon. In this lecture the mathematical foundation of Information Measure or Shannon's Entropy is discussed An application of this entropy in coding theory is also discussed showing that how much data can be compressed. Finally two procedures for encoding are described showing that how the code word lengths can be reduced.

References

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