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Computer Engineering

EEE 471

1) Signal processing involves analysing, modifying, and synthesizing signals such as, images, sound and scientific measurements. It can be used to improve transmission, storage efficiency and subjective quality and to also emphasize or detect components of interest in a measured signal.

Modes of Signal Processing

1) Continuous time - This involves signals that vary with the change of continuous domain, i.e. without considering some individual interrupted points.

2) Discrete time - This is for sampled signals, defined only at discrete points in time, which are quantized in time but not in magnitude.

3) Digital - This is processing of digitized discrete-time sampled signals by general purpose computers or by digital circuits such as ASICs.

4) Non-linear - This involves the analysis and processing of signals produced from non-linear systems and can be in the frequency or time domain.

5) Statistical - This involves treating signals as random processes, utilizing their statistical properties to perform signal processing tasks.

a) Continuous time signal processing.

b) Discrete time signal processing.

c) Digital signal processing.

d) Non-linear signal processing.

e) Statistical signal processing.

They can be applied in image processing, video processing, control systems, process control etc.

VISTALINE

2) An Expert system is a computer system emulating the decision-making ability of a human expert. They are designed to solve complex problems by reasoning through bodies of knowledge.

They are divided mainly into two subsystems;

i) The inference engine - This applies the rules to the known facts to make new facts. They include explanation and debugging abilities.

ii) The knowledge base - This represents the facts and rules in an expert system.

Expert system instrumentation can be defined as the proper selection of the appropriate instruments required for indicating, measuring and recording physical quantities etc.