

NAME: Lawal Mohammad Zahir
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1) Signal processing is concerned with improving the quality of the reading or signal at the output of a measurements system and one particular aim to attenuate any noise in the measurements signal that has not been eliminated by careful design of the measurements system.

The techniques in signal processing goes as follows:

- Analog
- Continuous time
- Discrete time
- Digital
- Non-linear
- Statistical

Analog: This is for signals that have not been digitalized. e.g telephone, and radar.

Continuous time: This is for signals that vary within the change of continuous domain

Discrete time:

Discrete time: This is for sampled signals, defined only at discrete points in time, and as such are quantized in time, but not in magnitude.

Digital: This is the processing of digitized discrete-time sampled signals. processing is done by general-purpose computers or by digital circuit.

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

Statistical: This is an approach ^{which} ~~where~~ treats signals as stochastic processes, utilizing their statistical properties to perform signal processing tasks.

2) An expert system is a computer system emulating the decision making ability of a human expert. Expert systems are designed to solve complex problems by reasoning through bodies of knowledge, represented mainly as if-then rules rather than through conventional procedure code.

An expert system is divided into two

subsystem:

- The inference engine which applies the rules to the known facts to deduce new facts.
- The knowledge base which represents the facts.