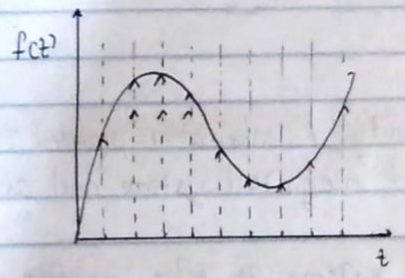
BRIGGS FRANCO SOIBI
17/ENG04/015
ELECT/ELECT

1 Signal processing is focused on improving the quality of a signal at the output of an instrument by analysing, modifying and synthesing said signals. To achieve this the following techniques are employed

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

Discrete time: This views values of variables as occuring at distinct, separate "points in time" or equivalently as being unchanged throughout each non-zero region of time. A discrete signal is a time series consisting of a sequence of quantities



Continuous time: Continuous time views variables as having a particular value for potentially only an infinitesimally short amount of time. Between any two points in time there are an infinite number of other points in time. A continuous signal is a ~~very~~ signal whose domain which is often time, is a continuum ie. the functions domain is an uncountable set. Unlike a discrete signal whose domain is countable

Statistical: This technique is important to signal processing due to random nature of some signals. This is achieved by using appropriate statistical techniques. The statistics is used in the formulation of appropriate models to describe the behavior of the system the development of appropriate techniques for estimation of model parametes and their assesments.

Analogue

This is a body of techniques that can be implemented to process analog signals. It plays a fundamental role. It converts real world information such as voice, voltage etc into 1s and 0s of the digital domain so that it can be processed by today's digital signal processors and the conversion from 1s and 0s back to real world signals requires analog signal processing

Digital

This technique is done by processors such as (DSP) Digital signal processors which take real world signals like voice audio, video etc that have been digitized and mathematically manipulate them.

Non-linear

This technique is used for non linear signals. The process is term the Gaussian Process. (GPs) Gaussian Processes are versatile tools that are successfully employed to solve nonlinear variables.

2

Expert systems

They are technologies that improve the quality of information provided to the experts and uses for operating modern automated and integrated systems and assist them in reliable operation of their systems.

Expert systems make use of complex AI systems to solve complex problems with minimal effort required