Abstract

Digital signal processing (DSP) is the study of signals in a digital representation and the processing methods of these signals. A digital filter uses a digital processor to perform numerical calculations on sampled values of the signal. The analog input signal must first be sampled and digitized. The resulting binary numbers, representing successive sampled values of the input signal, are transferred to the processor, which carries out numerical calculations on them. These calculations typically involve multiplying the input values by constants and adding the products together. If necessary, the results of these calculations, which now represent sampled values of the filtered signal, are output to convert the signal back to analog form. To achieve the desired filtering effect, Digital filters can achieve virtually any filtering effect that can be expressed as a mathematical function or algorithm.

References

- A New Structure Of Sharp Transition FIR Filters Using Frequency-Response Masking,
Ronghuan Yang, Bede Liu, Fellow, IEEE, and Yong Ching Lim, Member, IEEE
- Time Series Calculation Of Heart Rate Using Multi Rate FIR Filters MR Risk1, DF Slezak1, P Turjanski1, A Panelli1, RAM Taborda2, G Marshall1 1CONICET And Computer Science Department, Fceyn University Of Buenos Aires, Argentina, 2LIADE, Fceyn National University Of C’ Ordoba, Argentina
- Comparison Of Filter Design Methods To Generate Analytic Signals Laurent Vanbeylen, Johan Schoukens, Vrije Universiteit Brussel, Dep. ELEC, Pleinlaan, 2 1050 Brussels, BELGIUM E-Mail: Laurent. Vanbeylen@Vub. Ac. Be
- Design Of Fractional Delay Filters Using Convex Optimization, William Putnam Julius Smith, Department Of Electrical Engineering And Center For Research In Music And Acoustics (CCRMA) Stanford University Stanford, CA 94305-8180
- Low Complexity FIR Filters Using Factorization Of Perturbed Coefficients†, Cassondra Neau, Khurram Muhammad*, And Kaushik Roy ECE, Purdue University, West Lafayette, IN 47907 *Texas Instruments, Dallas, TX
- Low Power Asynchronous Digital Signal Processing, A Thesis Submitted To the University Of Manchester For The Degree Of Doctor Of Philosophy In The Faculty Of Science & Engineering

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Keywords