Abstract

Speed improvement in Digital signal processing is considered to be challenging. High speed multipliers and adders are prime requirement for digital filters and for FFT operations. Vedic mathematics is an ancient scheme based on 16 formulas (sutras). These are simple and easy methods which can be directly applied for DSP computations. Many researchers have worked on multiplier designs using Vedic operators. Present paper deals with exhaustive review of literature based on Vedic mathematics. It shows that Vedic mathematics can be used for fast signal processing. Multipliers based on Vedic mathematics can be used for speed improvement, reduction in power consumption, complexity, area etc. Vedic mathematical algorithms can be proved efficient over traditional (existing) methods in FIR and IIR filters for providing effective results in de-noising of biomedical Signal.

References

- S. M. Khairnar, Sheetal Kapade, Naresh Ghorpade 2012 &quot;Vedic mathematics- The cosmic software for implementation of fast algorithms&quot;, IJCSA-2012.
- Manorajan Pradhan, Rutuparna Panda, Sushant Kumar Sahu 2011, &quot;Speed
Vedic Mathematics for Digital Signal Processing Operations: A Review

Vedic Mathematics for Digital Signal Processing Operations: A Review

1, December 2011.
- Anvesh Kumar, Ashish Raman 2010, &quot;Low Power ALU Design by Ancient Mathematics&quot;, vol 5, 862-865, 2010
- Harpreet Singh Dhillon, Abhijit Mitra, &quot;A Digital Multiplier Architecture using Urdhva Tiryakhyam Sutra of Vedic Mathematics&quot; www.academia.edu
- Rana Mukharhi, Amit Kumar Chatterjee, Manishita Das 2011, &quot;Implementation of an efficient multiplier architecture based on ancient indian vedic mathematics using System
Vedic Mathematics for Digital Signal Processing Operations: A Review

- Chi-Jui Chou, Satish Mohanakrishnan, Joseph B. Evans, ”FPGA implementation of digital filters”; Proc. ICSPAT ’93.
- Lorca, F. G. Kessal, Dimigni 1997, ”Efficient ASIC and FPGA implementations of
IIR filters for real time edge detection&, Image processing, IEEE conference proceedings 1997.

Index Terms

Computer Science    Signal Processing

Keywords

Vedic Mathematics    Multiplier    DSP    Filter Design