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Real TIme Signal processing with DSP

Instructor

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Teaching Assistant

Email:

Department: Department of Electrical Engineering

Course Time:

Lecture venue: Electrical Engineering class rooms

Detailed Course Page: http://www.ee.iisc.ac.in/SOI_2017.pdf

Announcements

Brief description of the course

The course will cover the real time aspects of signal processing. The course will be based on raspberry PI or TI 6713 platform based. Architecture, Filter design, fft, and multirate signal processing.

Prerequisites

Knowledge of Digital Signal Processing

Syllabus

Implementation of discrete-time systems, DSP device architecture and programming (TMS320C6x), FIR/IIR digital filter design, Multirate DSP, Power spectrum estimation, Linear prediction and adaptive filtering, Real-time system development, DSP Programming, Code Composer Studio and DSP BIOS, Spawning and controlling tasks and data I/O, Real-time scheduling analysis, load analysis, Queues, semaphores and mailboxes, Real-time data exchange using Lab view, Mini Project.

Course outcomes

Implement the signal processing algorithms using real time signals and how it can be scheduled based on the

clock . The miniproject developed will be in the area of either audio/speech or in image processing

Grading policy

20% mid term test

15% Assignments

20% miniproject

40% final exam

Assignments

Assignments will be implemented on either raspberry PI of TMS processor.

Resources

Nasser kehtarnawaz, Real-Time Digital Signal Processing based on

TMS320C6000

current literature