NALLA NARASIMHA REDDY

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(UGC AUTONOMOUS INSTITUTION)

School of Engineering

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

A Report on

One Week Workshop on Hands-on Training in Digital Signal Processor and Digital Image Processing using MATLAB

(17th October to 22nd October 2022)

Department of ECE successfully conducted one week workshop on hands-on training in Digital Signal Processor and Digital Image Processing using MATLAB for 4th B.Tech students on 17th October to 22nd October 2022. The aim of this workshop is to implement digital signal processing applications like design of FIR filter, generation of tones etc., in digital signal processor (TMS320C6713 DSK) using Code Composer Studio and implementation of digital image processing applications like pixel connectivity, image transforms, image enhancement etc., using MATLAB. The workshop will comprise of live demonstration of tools and lectures delivered by Department faculty on platforms like MATLAB and Code Composer Studio.

The participants will have exposure to the state-of-the-art digital signal processors and image processing applications in MATLAB. After finishing this workshop, the participants will be able to design and implement digital signal processing applications like FIR filter in DSP processors and digital image processing applications like image compression in MATLAB.

Total 40 students were registered for the workshop and participation certificate for all 40 issued by college.

Dr. Sravankumar Vittapu and Dr. S. Karthick worked as Faculty Coordinators for the workshop.

Day-1:

After inaugural session Head of the Department addressed the gathering about the one-week workshop on hand-on training in Digital Signal Processor and Digital Image Processing using MATLAB.

Dr. S. Karthick briefed out features of TMS320C6713 digital signal processor (DSP) and DSP starter kit (DSK). Post lunch session was hands-on in Code Composer Studio.

Day-2:

The day started with the concept of generation of tones in digital signal processing using MATLAB. After a small tea break, he explained the generation of tones in TMS320C6713 DSK. Afternoon complete session was hands-on training on generation of tones in TMS320C6713 DSK.

Day-3:

Third day was started with the concept of filter designs in digital signal processing using MATLAB and after a small tea break, explained the design and implementation of FIR and IIR filters in TMS320C6713 DSK. Afternoon session was hands-on training on design and implementation of FIR and IIR filters in TMS320C6713 DSK.

Day-4:

This day Dr. Sravankumar Vittapu started discussion was all about pixel connectivity like 4-adjacency, 8-adjacency, m-adjacency and image transforms from scratch in MATLAB. After lunch, hands-on practice on the implementation of aforementioned topics in MATLAB.

Day-5:

The fifth day forenoon session was started with implementation of image enhancement filters like smoothing and sharpening filters, image restoration filters like mean, median, max and min filters respectively are implemented in MATLAB. After lunch, hands-on practice on the implementation of aforementioned topics in MATLAB.

Day-6:

In day 6, implementation of image compression using discrete cosine transform, image segmentation techniques are implemented in MATLAB. After lunch, hands-on practice on the implementation of aforementioned topics in MATLAB.

In the valedictory session speakers were facilitated and a vote of thanks was presented by workshop coordinator.

Glimpse of the Workshop: