PROGRAMME REPORT ON

Hands on training-Hands on training on DSP Processor TMS320C6748

Resource Person

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Organized by

ECE- PMIST

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Location: DSP Laboratory

Report on Hands-On Training on DSP Processor TMS320C6748 for Faculties

1. Introduction

The hands-on training program on the DSP Processor TMS320C6748 for faculties was organized to enhance their expertise in digital signal processing (DSP) and its applications. This training aimed to equip educators with the technical skills and pedagogical approaches necessary to incorporate DSP concepts into academic curricula, research, and industry-oriented projects.

2. Objectives

The primary objectives of the training program were:

1. To familiarize faculties with the architecture, features, and functionalities of the TMS320C6748 DSP processor.
2. To provide hands-on experience in programming and debugging using Code Composer Studio (CCS).
3. To develop the ability to implement DSP algorithms such as filtering, FFT, and convolution.
4. To explore interfacing peripherals such as ADCs, DACs, and sensors with the DSP processor.
5. To encourage the integration of DSP concepts in teaching methodologies, student projects, and research initiatives.

3. Attendance:

Registered Participants:
        Male   : 03
        Female : 11

4. Schedule and Content Overview

The training program spanned [Insert Duration, e.g., 3 days], with sessions divided into theoretical and practical components.

Day	Topics Covered	Session Highlights
Day 1	- Introduction to DSP and TMS320C6748	Overview of DSP applications, architecture of TMS320C6748, setup of development tools.
	- Programming with Code Composer Studio	Writing and debugging simple programs.
Day 2	- DSP Algorithm Implementation	FIR/IIR filtering, FFT, convolution on the DSP processor.
	- Real-Time Signal Processing	Hands-on session with real-time audio and signal acquisition.
	- Interfacing Peripherals	ADC, DAC, and sensor integration with the TMS320C6748.
	- Project Design and Case Studies	Discussion of research opportunities, project ideas, and teaching strategies.

5. Methodology
- **Lecture Sessions**: Delivered theoretical insights into the architecture, tools, and algorithms related to the TMS320C6748.
- **Hands-On Exercises**: Participants implemented practical examples, wrote and debugged programs, and interfaced the DSP processor with external peripherals.
- **Collaborative Projects**: Faculties were grouped to brainstorm and design small DSP-based applications.
- **Interactive Discussions**: Facilitated sharing of ideas on integrating DSP concepts into academic and research activities.

6. Conclusion
The hands-on training program on the TMS320C6748 DSP processor was highly successful in enhancing the technical and teaching skills of participating faculties. The knowledge gained will contribute to improving DSP education, promoting research, and guiding innovative student projects.

7. Outcomes
The training successfully achieved the following outcomes:
1. Participants gained in-depth knowledge of the TMS320C6748 architecture and its programming.
2. Faculties developed the capability to teach DSP concepts effectively using real-world applications.

3. Several innovative project ideas were proposed, including audio processing systems and biomedical signal analysis.
4. Improved understanding of integrating DSP processors into research and development projects.
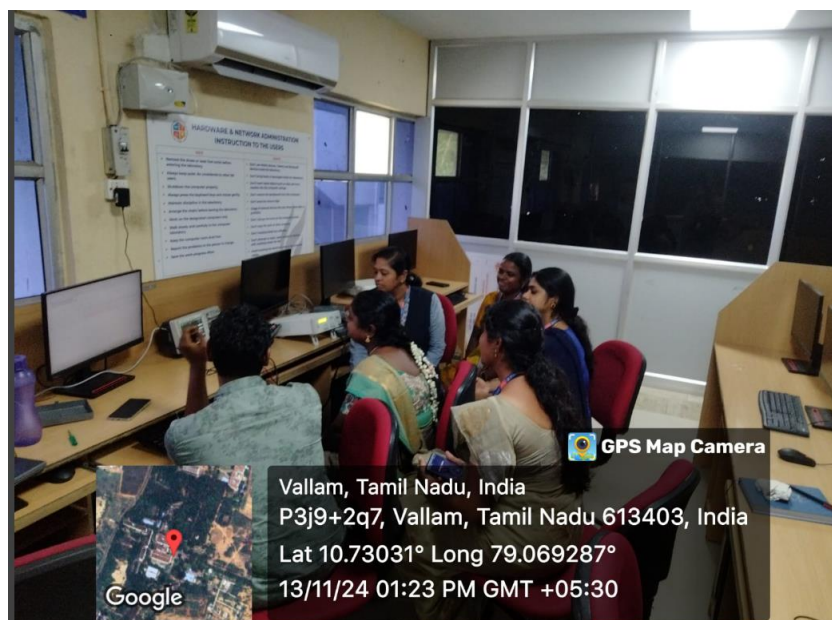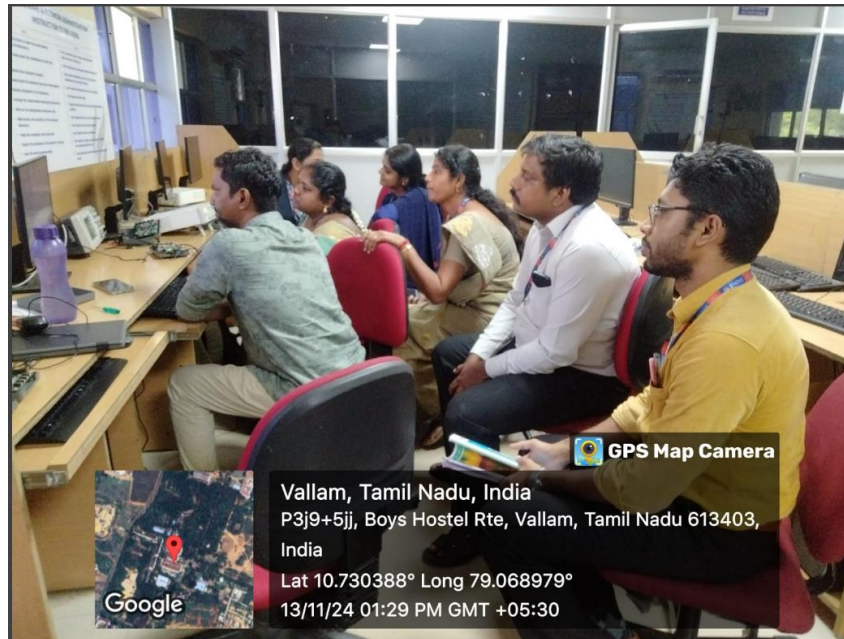
8. Recommendations
1. Organize advanced workshops focusing on specific applications like image processing or IoT using DSP.
2. Establish a DSP-focused research group to collaborate on projects and publish findings.
3. Incorporate TMS320C6748-based lab exercises into the academic curriculum for better student engagement.

9. Certificate (Sample):

10. Geo Tag Photos:

11. Feedback Form:

Feedback from the participating faculties highlighted:

- The practical sessions were highly beneficial for understanding real-time DSP applications.
- The training bridged the gap between theoretical concepts and their practical implementations.
- Suggestions were made to include more advanced topics like adaptive filtering and machine learning applications in DSP.