SHRI G. S INSTITUTE OF TECHNOLOGY & SCIENCE, INDORE

DEPARTMENT OF ELECTRONICS & INSTRUMENTATION ENGINEERING

REPORT

Conducted by: ARK Infosolutions Pvt. Ltd.
Organized by: Electronics & Instrumentation Department
Venue: CIDI, G.S. Institute of Technology & Science
Date: 22/3/2024

A one-day workshop on "MATLAB for Digital Signal Processing" was conducted by ARK Infosolutions Pvt. Ltd. at the Centre for Innovation and Development of Industries (CIDI), G.S. Institute of Technology & Science, organized by the Electronics & Instrumentation Department. The workshop aimed at familiarizing students of II year and III year of EI Department with the application of MATLAB in the field of Digital Signal Processing (DSP). The workshop provided a hands-on experience with various tools and techniques essential for performing DSP operations using MATLAB.

Objectives of the Workshop

The primary objectives of the workshop were:

- To introduce participants to the basics of Digital Signal Processing.
- To demonstrate the capabilities of MATLAB as a tool for implementing DSP algorithms.
- To provide practical knowledge on analyzing, processing, and visualizing digital signals using MATLAB.
- To enhance the participants' problem-solving skills in the domain of DSP.

Agenda of the Workshop

The workshop was conducted in two main sessions taken by Mr. Anshuman Prakash Sr. Application Engineer from ARK Infosolutions Pvt. Ltd., which included both theoretical discussions and practical hands-on sessions.

- **Session 1: Introduction to Digital Signal Processing**
  - Overview of DSP concepts
  - Types of signals and their properties
  - Basic operations in DSP
  - Introduction to MATLAB and its DSP toolbox
- **Session 2: Hands-on Training on MATLAB**

- Signal generation in MATLAB
- Implementing various DSP algorithms
- Visualization of signals and results using MATLAB tools
- Practical exercises on analyzing and processing signals using MATLAB

Outcomes and Learnings

By the end of the workshop, the participants:

- Gained a deeper understanding of Digital Signal Processing concepts and their real-world applications.
- Became proficient in using MATLAB for signal analysis and processing.
- Developed practical skills in implementing various DSP techniques
- Were able to visualize and interpret the results of DSP operations using MATLAB's built-in plotting functions.

Feedback

The workshop was conducted in a highly interactive format with a mix of lectures, practical demonstrations, and individual exercises. The feedback from the participants was overwhelmingly positive. Participants appreciated the practical approach of the workshop, which allowed them to directly apply theoretical knowledge in real-world scenarios. The facilitators were commended for their clear explanations and hands-on training, which greatly enhanced their understanding of DSP concepts and MATLAB usage.

Conclusion

The one-day workshop on MATLAB for Digital Signal Processing was a successful and enriching experience for all attendees. The combination of theoretical discussions and practical applications ensured that participants were well-equipped to use MATLAB for DSP tasks. The workshop not only expanded the participants' knowledge but also ignited interest in exploring more advanced topics in the field of signal processing.