Modeling Signal Processing Systems using Simulink: Fundamentals

The Simulink environment is used for designing, simulating, implementing, and testing signal processing applications like communications, audio processing, video processing, and image processing. The use of Simulink models as an alternative to, or in conjunction with MATLAB, can significantly speed-up research and development efforts in academia. Participants of this hands-on workshop will learn the basics of modeling and simulating signal processing systems in Simulink. Implementing systems on a DSP board using Real-Time Workshop will also be demonstrated. Researchers looking to build and implement real-world signal processing systems and educators looking for simulation and implementation tools for signal processing should benefit from this hands-on workshop.

Outline for Workshop

Simulink On-ramp (2 hrs)

- Building and Simulating Simple Systems
- Simulation Fundamentals
- Working with MATLAB
- Combining Blocks to Create Sub-systems

The Signal Processing Blockset (1 hrs)

- Speeding up Simulations using Frames
- Designing and Applying Filters
- Fixed-point Analysis

Modeling Communication System (30 min)

- The Communications Blockset
- Modeling an 802.11a Router

Real-Time Workshop (30 min)

- Code Generation for Real-Time and Embedded Applications
- Targeting DSP Board

Registration

Participants are required to bring their own laptops. Software will be provided by The MathWorks in advance of the workshop. To register, please email Kirtan.Modi@mathworks.com. In the email include your Full Name, Organization, Address, Email and Telephone number and Operating System on the laptop you plan on using. Seating is limited, so please respond by Friday, October 16.

Follow-up Workshop

Participants may be offered a follow-up workshop on advanced topics in January 2010.