How to Use the Signal and Image Processing Libraries to Jump-Start Your Real-Time DSP Applications

Dr. Chris Chung, Software Applications Engineer, Texas Instruments

Efficient algorithm mapping on a digital signal processor (DSP) is one of the key tasks in developing real-time DSP applications. The digital and image processing libraries (DSPLIB/IMGLIB) provide a set of C-callable, assembly-optimized functions commonly used in signal and image processing applications to help users quickly attain optimal performance in their real-time system development. The DSPLIB/IMGLIB includes several functions for each processing category, based on the input parameter conditions, to provide parameter-specific optimal performance. Therefore, it is important to understand the differences and requirements of the functions in each category. This presentation will cover the usage and performance of key DSPLIB/IMGLIB functions with three signal processing examples (filtering, frequency analysis and motion detection) on a TMS320DM642 DSP platform.

Presentation Outline
- Introduction to DSPLIB/IMGLIB
- Differences and requirements of the functions
- Use of DSPLIB/IMGLIB for signal processing applications
- Demonstration
- Questions and answers

Target Audience
Engineers and team leads who are developing DSP applications.

Attendee Prerequisite Knowledge or Experience
Fundamental DSP algorithms and architectures

Speaker Biography
Dr. Chris Chung is a software applications engineer at Texas Instruments, working on highly optimized benchmarks and signal processing libraries for the TMS320C6x™ DSP. He received a Ph.D. in electrical engineering from the University of Washington and works on DSP architectures/algorithms and system-level performance evaluation/optimization.

Speaker's Previous Speaking Experience

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<tr>
<td>IEEE International Conference on Application-Specific Systems, Architectures and Processors</td>
<td>April 2002</td>
<td>Design and Evaluation of a Multimedia Computing Architecture Based on a 3D Graphics Pipeline</td>
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<tr>
<td>IEEE International Conference on Computer Design</td>
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<td>A Register File with Transposed Access Mode</td>
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