Advanced Software Solutions for Signal Processing Applications using MATLAB®

ABSTRACT:
Utilising software for the design and simulation of complex systems or algorithms is a necessary first step to verify the behaviour of these innovative ideas. In the signal processing world, whether it be academia, research, or industry, MATLAB software together with the Signal Processing Toolbox (an add-on product) are ubiquitous. Almost every signal processing engineer has used MATLAB to design a filter or estimate the power spectral density of a signal. But MATLAB has much more to offer than just filtering and spectral analysis techniques. For example, did you know that: MathWorks has add-on tools for Video and Image Processing, Communications system design (Physical Layer), and RF modelling? MathWorks has add-on tools to simulate fixed point data types to help analyse quantisation effects in filter designs and algorithms? MathWorks has a simulation environment for dynamic time driven systems called Simulink®, and for discrete event driven systems called SimEvents®? It is possible to model and analyse the effects of multiple domains (e.g. Analog and Digital) in one simulation environment? You can automatically generate ANSI-C code or HDL code from Simulink models and MATLAB code? MATLAB can co-simulate with popular 3rd party IDE’s (e.g. Texas Instrument’s Code Composer Studio or Analog Devices VDSP++) and HDL simulators (e.g. Mentor Graphics® ModelSim) to help verify your implementations? During this presentation we will take a look at several examples to demonstrate each of these capabilities. Through these demonstrations you will learn how MathWorks tools can be used to solve a wide range of signal processing problems.

SPEAKER:
Daryl currently holds the position of Senior Applications Engineer for the signal processing and communications industry at MathWorks Australia. Daryl received both his PhD and B. Eng (Electrical Engineering) from the Queensland University of Technology, where he also spent a year working as a research assistant. Daryl's research was primarily in the field of speech and audio processing for biometrics and compression. Daryl joined the Australian distributor of MathWorks in 2004 where he spent the next 20 months in the sales team for the Academic industry. Daryl joined the MathWorks Australia sales team in April 2006 and transitioned to his current role as an Applications Engineer in March 2007.

Note: Engineers Australia members are eligible to claim CPD for attending this event.