

Visit These Sessions during DATE16 Model Based Design and Verification Day: Wednesday, March 16

Session 5.8:

8:30 in Exhibition Theatre (Seminar Rooms 3+4)

Exhibition Keynote

The Transformative Fusion of Sensing, Computing, Communication & Control

Hear how researchers and organizations are creating increasingly smart and multi-function systems with powerful, low-cost technologies for sensing, computing, communications, and control that are changing the markets of embedded hardware and software.

Application Talk

Model Based Design for 4G and 5G Wireless Communications Software Defined Radio using MATLAB

Learn about a model based design workflow for wireless communications using MATLAB in combination with supported Xilinx Zynq based SDR hardware implementation platforms, from developing floating point simulations for the PHY layer of a LTE receiver to implementing fixed point simulations and verifying performance using real off-the-air RF data.

Session 6.6:

Modelling and Control of Cyber-Physical Systems

11:00 in Konferenz 4 - Refer to program for details.

Session 7.6:

Statistical and Symbolic Techniques for the Analysis and Testing of Embedded Software

14:30 in Konferenz 4 - Refer to program for details.

Session 8.8:

Tutorial: An Industry Approach to FPGA/ARM System Development and Verification

17:00 in Exhibition Theatre (Seminar Rooms 3+4)

See how to implement an application that leverages the FPGA and ARM core of a Zynq SoC, a design workflow that combines system level simulation with automatic code generation, and functional verification using MATLAB and Simulink in a SystemVerilog workflow.

About the Presenters



Jim Tung
Exhibition Keynote

Jim Tung is a 25-year veteran of MathWorks, holding the positions of vice president of marketing and vice president of business development before assuming his current role focusing on business and technology strategy and analysis. Jim previously held management positions at Lotus Development and Keithley DAS, a pioneering manufacturer of PC-based data acquisition systems.



John Zhao
Tutorial

John Zhao is leading a global team of technical marketing managers at MathWorks for system design and simulation in digital signal processing, wireless communications, as well as FPGA/ASIC/SoC prototyping and implementation areas. He has also served as the development manager for HDL Coder, a product that generates synthesizable RTL code from Simulink and MATLAB.



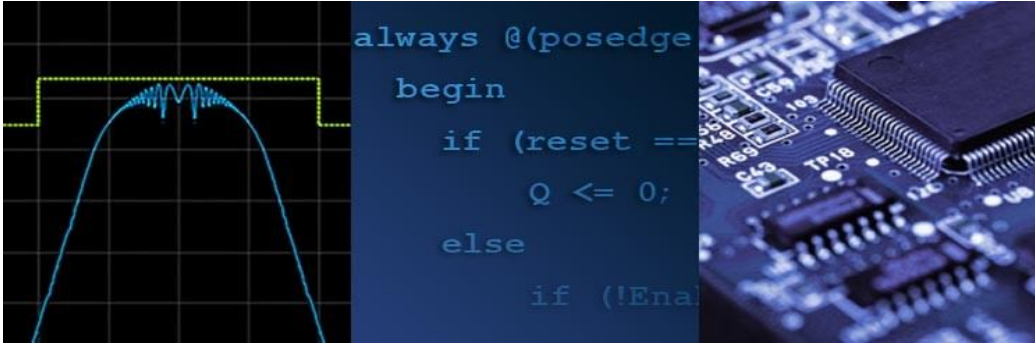
Bob Stewart
Application Talk

Bob Stewart is the MathWorks Professor of Signal Processing at the University of Strathclyde, Chair and Head of the Department of Electronic and Electrical Engineering, with more than 55 academic staff and almost 300 researchers. His recent research has been on digital communications and software defined radio, with specific interest in model based design and on radio standards such as LTE, 802.11. In 2015 Bob authored the open sourced book 'Software Defined Radio using MATLAB/Simulink and RTL-SDR' (www.desktopSDR.com).

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Develop Embedded Systems with MATLAB and Simulink

- Simulate your algorithms and examine design tradeoffs on the desktop
- Generate, acquire, and analyze signals using a variety of devices such as desktop audio cards and low-cost hardware such as BeagleBone Black and RTL SDR
- Generate C or HDL code for execution on embedded DSPs, ASICs, and FPGAs
- Deploy your algorithms to low-cost hardware such as Raspberry Pi™, PandaBoard, and ARM Cortex-M

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Design and Verify FPGA, ASIC and SoCs with MATLAB and Simulink

- Simulate your algorithms and evaluate alternative system architectures and implementation details
- Explore data bit width and fixed point settings
- Generate readable and synthesizable VHDL and Verilog code for prototyping and implementation
- Customize the generated code for standard compliance and optimize the code to meet performance and resource requirement
- Verify that the implementation matches the system specification
- Program Xilinx and Altera FPGAs directly from MATLAB and Simulink

Learn more at mathworks.com/discovery/hardware-design.html

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- **Design and Verification of FPGA and ASIC Applications**
- **Accelerate Design Space Exploration Using HDL Coder Optimizations**
- **Introducing Fixed-Point Designer for MATLAB and Simulink**
- **HDL Code Generation For Digital Filters**
- **A Guided Workflow for Zynq Using MATLAB and Simulink**
- **Development of High-Performance Video Processing Using HDL Coder**
- **Connecting Simulink with your SystemVerilog Workflow for Functional Verification**
- **How to Build Custom Motor Controllers for Zynq SoCs with MATLAB and Simulink**

Classroom resources:

mathworks.com/dsp-classroom-resources or mathworks.com/academia/examples.html

Hardware platforms for project-based learning:

mathworks.com/academia/hardware

Online courses:

mathworks.com/elearning