Presented By:
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UCI Samueli
School of Engineering

**Department of
Civil and Environmental
Engineering**

Civil Engineering
Seminar Series

**Thursday, May 12th, 2016
MDEA
4:00PM to 4:50PM**

Structural Analysis With ABAQUS

SIMULIA delivers a scalable suite of unified analysis products that allow all users, regardless of their simulation expertise or domain focus, to collaborate and seamlessly share simulation data and approved methods without loss of information fidelity. The Abaqus® Finite Element Analysis product suite offers powerful and complete solutions for both routine and sophisticated engineering problems covering a vast spectrum of industrial applications. The extensive capabilities of Abaqus include:

Linear and nonlinear FEA (Implicit and Explicit approaches); Transient and state-state heat transfer (conduction, convection, radiation); Computational Fluid Dynamics and Fluid-Structure Interaction; Coupled physics: structural acoustics, thermal-electrical, electromagnetics, and more; Material models for handling rubber, thermo-plastics, powder metals, human tissue, soil, concrete, composites, and other complex materials; Flexible multi-body dynamics, controls, and joint behavior; Fracture mechanics, progressive damage, and failure modeling; Robust and efficient methods for handling contact between edges, surfaces, and bodies; Impact, ballistics, explosions, and crash simulations; Parallel-processing on desktops or clusters for rapid turnaround and large-scale analyses; Easy to use, interactive GUI for model preparation and results interpretation; Automation tools for customization of standard analysis workflows;

For his lecture at UCI, Doug will provide a quick introduction to SIMULIA, a general overview of Abaqus, then focus on key structural analysis capabilities of interest to Civil/Structural Engineering users. Topics will include a review of the material models available for modeling concrete, use of the embedded element approach for modeling reinforced concrete, connector elements for the modeling of joints, available beam element stress outputs, and more.

ⅢⅢ ABAQUS

Sakya Tripathy is a Senior Technical Specialist in the SIMULIA Growth's Industry Diversification initiative focusing on Additive Manufacturing and Multiscale Material Modeling technologies. As a part of this group, he engages with customers and partners for technical enablement. He also works closely with Simulia R&D and other DS brands to advance unified solutions especially in the additive manufacturing domain. He has been with DS for over 5 years during which he has held multiple technical positions. He holds a PhD in mechanical engineering from University of Virginia and a bachelor's degree from Indian Institute of Technology, Kanpur.

Questions? - cee@uci.edu - (949) 824-7548