Keynote

Title: Improving Design, Manufacturing, and Even Test through Test-Data Mining

Presenter: Prof. Shawn Blanton
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Abstract:
Since yield is not 100%, the main objective of test has and continues to be screening out bad ICs. Today, however, test is being used to provide valuable information about failing chips, answering questions about whether the design, the fabrication process or some combination of the two is responsible for failure. The information extracted is, ideally, used to improve design, fabrication and even test itself. In this talk, an overview of research in the Carnegie Mellon Advanced Chip Testing Laboratory in this area will be described with particular emphasis on one methodology that focuses on measuring the effectiveness of any fault model or test metric using normally-available test data. Experiment results from manufactured chips from both IDMs and chip-design houses will be used to illustrate the potential of this approach.

Biography:
Shawn Blanton is a professor in the Department of Electrical and Computer Engineering at Carnegie Mellon University where he serves as director of the Center for Silicon System Implementation (CSSI, www.ece.cmu.edu/~cssi), an organization consisting of 18 faculty members and over 80 students focused on the design and manufacture of silicon-based systems. He received the Bachelor's degree in engineering from Calvin College in 1987, a Master's degree in Electrical Engineering in 1989 from the University of Arizona, and a Ph.D. degree in Computer Science and Engineering from the University of Michigan, Ann Arbor in 1995.

Professor Blanton’s research interests are housed in the Advanced Chip Testing Laboratory (ACTL, www.ece.cmu.edu/~actl) and include the design, verification, test and diagnosis of integrated, heterogeneous systems. He has published many papers in these areas and has several issued and pending patents in the area of IC test and diagnosis. Prof. Blanton has received the National Science Foundation Career Award for the development of a microelectromechanical systems (MEMS) testing methodology and two IBM Faculty Partnership Awards. He is a Fellow of the IEEE, and is the recipient of the 2006 Emerald Award for outstanding leadership in recruiting and mentoring minorities for advanced degrees in science and technology.