

2006 Phil Kaufman Award for Distinguished Contributions to EDA sponsored by the EDA Consortium

Robert Dutton, Robert and Barbara Kleist Professor of Engineering at Stanford Univ. and Director of the Integrated Circuits Laboratory

Robert Dutton is the recipient of the prestigious 2006 Phil Kaufman Award for his contributions as the “Father of TCAD (Technology Computer Aided Design)” which he pioneered and helped transition into successful industrial and commercial deployment.

IEEE Emanuel R. Piore Award

Randal E. Bryant - Carnegie Mellon Univ., Pittsburgh, PA

The IEEE Emanuel R. Piore Award was established by the IEEE Board of Directors in 1976 for outstanding contributions in the field of information processing in relation to computer science, deemed to have contributed significantly to the advancement of science and to the betterment of society. The Award is named in honor of Emanuel Piore, who was an enlightened American scientist who understood the value of basic scientific research, as well as that of applied research. The award is sponsored by the IEEE Emanuel R. Piore Award Fund.

Randal E. Bryant is professor and dean of the School of Computer Science at Carnegie Mellon Univ. He gained international recognition for his research on ways to improve the quality of hardware designs by simulating and verifying them prior to fabrication. Bryant developed methods to reason about circuits using ordered binary decision diagrams (OBDDs), which revolutionized the field of electronics by helping to produce more reliable computing platforms. OBDDs provide the underlying representation for tools performing hardware and software verification, logic circuit synthesis, circuit test generation and artificial intelligence planning.

More recently, Dr. Bryant has been developing formal verification techniques that use more abstract representations of circuit behavior, an approach that can handle much larger and more complex systems.

An IEEE Fellow, Dr. Bryant holds a bachelor’s degree in applied mathematics from the Univ. of Michigan, College of Engineering in Ann Arbor and a doctoral degree from the Massachusetts Institute of Technology in Cambridge, MA.

IEEE Circuits and Systems Society 2007 Industrial Pioneer Award

Rob A. Rutenbar - Carnegie Mellon Univ., Pittsburgh, PA

For pioneering contributions to the development of EDA tools for synthesis of analog/mixed-signal integrated circuits and to their dissemination into widespread use in semiconductor industry by industrial cooperation and by starting up a CAD company.

IEEE Circuits and Systems Society 2007 Outstanding Young Author Award

Zhuo Li - IBM Austin Research Laboratory, Austin, TX

For the paper entitled, “*A Fast Algorithm for Optimal Buffer Insertion*”, IEEE Trans. on Computer-Aided Design of Integrated Circuits and Systems, vol. 24, no. 6, pp. 879-891, June 2005 (paper co-authored with Weiping Shi)

IEEE Transactions on Computer-Aided Design 2007 Donald O. Pederson Best Paper Award

Guoyong Shi - Shanghai Jiao Tong Univ., Shanghai, China

Bo Hu - Cadence Design Systems, Inc., San Jose, CA

C.-J. Richard Shi - Univ. of Washington, Seattle, WA

For the paper entitled, “*On Symbolic Model Order Reduction*”, IEEE Trans. on Computer-Aided Design of Integrated Circuits and Systems, vol. 25, no. 7, pp. 1257-1272, July 2006

IEEE Transactions on Circuits and Systems 2007 Guillemín-Cauer Best Paper Award

Payam Heydari - Univ. of California, Irvine, CA

Massoud Pedram - Univ. of Southern California, Los Angeles, CA

For the paper entitled, “*Model-Order Reduction Using Variational Balanced Truncation with Spectral Shaping*”, IEEE Transactions on Circuits and Systems: Regular Papers, vol. 53, no. 4, pp. 879-891, April 2006

2007 IEEE Fellows

Ruchir Puri - IBM Corp., Yorktown Heights, NY

For contributions to automated logical and physical design of electronic circuits

Anirudh Devgan - Magma Design Automation, Inc., Austin, TX

For contributions to electrical analysis, and simulation of integrated circuits

ACM Paris Kanellakis Theory and Practice Award

Robert K. Brayton - Univ. of California, Berkeley, CA

For leading the development and practical realization of algorithms for logic synthesis and for electronic system simulation, thereby helping to create key enabling technologies for the Electronic Design Automation industry.

ACM Transactions on Design Automation of Electronic Systems (TODAES) 2007 Best Paper Award

Impact of intercluster communication mechanisms on ILP in clustered VLIW architectures • Volume 12, Issue 1, January 2007, Page 1.

Anup Gangwar - Freescale Semiconductor, Inc., India Pvt. Ltd., India

M. Balakrishnan - Indian Institute of Technology, Delhi, India

Anshul Kumar - Indian Institute of Technology, Delhi, India

ACM/SIGDA Distinguished Service Awards

Daniel Gajski - Univ. of California, Irvine, CA

Mary Jane Irwin - Pennsylvania State Univ., University Park, PA

Donald E. Thomas - Carnegie Mellon Univ., Pittsburgh, PA

Chuck Shaw - Cadence Design Systems, Inc., San Jose, CA

For outstanding contributions to the creation of the SIGDA/DAC University Booth, on the occasion of its 20th edition

Soha Hassoun - Tufts Univ., Medford, MA

Steven P. Levitan - Univ. of Pittsburgh, Pittsburgh, PA

For outstanding contributions to the creation of the SIGDA Ph.D. Forum at DAC on the occasion of its 10th edition

Richard Auletta - Cadence Design Systems, Inc., Louisville, CO

For over a decade of service to SIGDA as University Booth Coordinator, Secretary/Treasurer, and Executive Committee Member-at-Large.

ACM Outstanding Dissertation in Electronic Design Automation Award

Haifeng Qian - Univ. of Minnesota, Minneapolis, MN

For the dissertation entitled "*Stochastic and Hybrid Linear Equation Solvers and their Applications in VLSI Design Automation*"

SIGDA Outstanding New Faculty Award

Michael Orshansky - Univ. of Texas, Austin, TX

For a junior faculty member early in her or his academic career who demonstrates outstanding potential as an educator and/or researcher in the field of electronic design automation.

44th DAC Best Paper Candidates

Fifteen papers were nominated by the Technical Program Committee as a DAC Best Paper Candidate; six in front-end design and nine in back-end design. Final decisions will be made after the papers are presented at the conference. The awards for the best papers, one in front-end design and one in back-end design, will be presented at 12:30 on Thursday, June 7 in Ballroom 20ABC, just before the Keynote Address.

3.4 Simulink-Based MPSoC Design Flow: Case Study of Motion-JPEG and H.264

Kai Huang - *Zhejiang Univ., Hangzhou, China*

Sangil Han - *Seoul National Univ., Seoul, South Korea*

Katalin Popovici - *TIMA Labs., Grenoble, France*

Lisane Brisolaro - *Univ. Rio Grande do Sul, Porto Alegre, Brazil*

Xavier Guerin - *TIMA Labs., Grenoble, France*

Lei Li - *Zhejiang Univ., Hangzhou, China*

Xiaolang Yan - *Zhejiang Univ., Hangzhou, China*

Soo-Ik Chae - *TIMA Labs., Grenoble, France*

Luigi Carro - *Univ. Rio Grande do Sul, Porto Alegre, Brazil*

Ahmed A. Jerraya - *CEA-LETI MINATEC, Grenoble, France*

6.2 Width-dependent Statistical Leakage Modeling for Random Dopant Induced Threshold Voltage Shift

Jie Gu - *Univ. of Minnesota, Minneapolis, MN*

Sachin Sapatnekar - *Univ. of Minnesota, Minneapolis, MN*

Chris Kim - *Univ. of Minnesota, Minneapolis, MN*

8.1 Voltage-Frequency Island Partitioning for GALS-based Networks-on-Chip

Umit Y. Ogras - *Carnegie Mellon Univ., Pittsburgh, PA*

Radu Marculescu - *Carnegie Mellon Univ., Pittsburgh, PA*

Puru Choudhary - *Carnegie Mellon Univ., Pittsburgh, PA*

Diana Marculescu - *Carnegie Mellon Univ., Pittsburgh, PA*

9.1 Interdependent Latch Setup/Hold Time Characterization via Euler-Newton Curve Tracing on State-Transition Equations

Shweta Srivastava - *Univ. of Minnesota, Minneapolis, MN*

Jaijeet Roychowdhury - *Univ. of Minnesota, Minneapolis, MN*

13.1 Endurance Enhancement of Flash-Memory Storage Systems: An Efficient Static Wear Leveling Design

Yuan-Hao Chang - *National Taiwan Univ., Taipei, Taiwan*

Jen-Wei Hsieh - *National Chiayi Univ., Chiayi, Taiwan*

Tei-Wei Kuo - *National Taiwan Univ., Taipei, Taiwan*

14.1 Comparative Analysis of Conventional and Statistical Design Techniques

Steven M. Burns - *Intel Corp., Hillsboro, OR*

Mahesh C. Ketkar - *Intel Corp., Hillsboro, OR*

Noel Menezes - *Intel Corp., Hillsboro, OR*

Keith A. Bowman - *Intel Corp., Hillsboro, OR*

James W. Tschanz - *Intel Corp., Hillsboro, OR*

Vivek De - *Intel Corp., Hillsboro, OR*

16.1 Period Optimization for Hard Real-time Distributed Automotive Systems

Abhijit Davare - *Univ. of California, Berkeley, CA*

Qi Zhu - *Univ. of California, Berkeley, CA*

Marco Di Natale - *General Motors Corp., Warren, MI*

Claudio Pinello - *Cadence Design Systems, Inc., Berkeley, CA*

Sri Kanajan - *General Motors Corp., Warren, MI*

Alberto Sangiovanni-Vincentelli - *Univ. of California, Berkeley, CA*

17.3 Towards An Ultra-Low-Power Architecture Using Single-Electron Tunneling Transistors

Changyun Zhu - *Queen's Univ., Kingston, ON, Canada*

Zhenyu Gu - *Northwestern Univ., Evanston, IL*

Li Shang - *Queen's Univ., Kingston, ON, Canada*

Robert P. Dick - *Northwestern Univ., Evanston, IL*

Robert Knobel - *Queen's Univ., Kingston, ON, Canada*

20.1 Characterization and Estimation of Circuit Reliability Degradation under NBTI using On-Line IDDQ Measurement

Kunhyuk Kang - *Purdue Univ., West Lafayette, IN*

Keejong Kim - *Purdue Univ., West Lafayette, IN*

Ahmad Ehteshamul Islam - *Purdue Univ., West Lafayette, IN*

Muhammad Ashraf Alam - *Purdue Univ., West Lafayette, IN*

Kaushik Roy - *Purdue Univ., West Lafayette, IN*

23.1 Progressive Decomposition: A Heuristic to Structure Arithmetic Circuits

Ajay K. Verma - *EPFL, Lausanne, Switzerland*

Philip Brisk - *EPFL, Lausanne, Switzerland*

Paolo Ienne - *EPFL, Lausanne, Switzerland*

24.1 Parameter Finding Methods for Oscillators with a Specified Oscillation Frequency

Igor Vytyaz - *Oregon State Univ., Corvallis, OR*

David C. Lee - *Berkeley Design Automation, Santa Clara, CA*

Suihua Lu - *Berkeley Design Automation, Santa Clara, CA*

Amit Mehrotra - *Berkeley Design Automation, Santa Clara, CA*

Un-Ku Moon - *Oregon State Univ., Corvallis, OR*

Kartikeya Mayaram - *Oregon State Univ., Corvallis, OR*

27.2 RQL: Global Placement via Relaxed Quadratic Spreading and Linearization

Natarajan Viswanathan - *Iowa State Univ., Ames, IA*

Gi-Joon Nam - *IBM Corp., Austin, TX*

Charles Alpert - *IBM Corp., Austin, TX*

Paul Villarrubia - *IBM Corp., Austin, TX*

Haoxing Ren - *IBM Corp., Austin, TX*

Chris Chu - *Iowa State Univ., Ames, IA*

30.4 New Test Data Decompressor for Low Power Applications

Dariusz Czysz - *Poznan Univ. of Technology, Poznan, Poland*

Grzegorz Mrugalski - *Mentor Graphics Corp., Wilsonville, OR*

Janusz Rajski - *Mentor Graphics Corp., Wilsonville, OR*

Jerzy Tyszer - *Poznan Univ. of Technology, Poznan, Poland*

33.3 On-The-Fly Resolve Trace Minimization

Ohad Shacham - *IBM Corp., Haifa, Israel*

Karen Yorav - *IBM Corp., Haifa, Israel*

34.1 An Integer Linear Programming Based Routing Algorithm for Flip-Chip Design

Jia-Wei Fang - *National Taiwan Univ., Taipei, Taiwan*

Chin-Hsiung Hsu - *National Taiwan Univ., Taipei, Taiwan*

Yao-Wen Chang - *National Taiwan Univ., Taipei, Taiwan*

2007 DAC/ISSCC Student Design Contest Winners

The Student Design Contest promotes excellence in the design of electronic systems by providing a competition for graduate and undergraduate students at universities and colleges. It is co-organized by ISSCC and DAC. This year we received nearly 50 submissions in three categories: operational systems, operational chips, and conceptual designs based on simulation. Nine award winners were selected. The Student Design Contest is jointly sponsored by DAC, industry sponsors, and ISSCC. The 2007 award recipients are listed below.

A Wireless Implantable Microsystem for Continuous Blood Glucose Monitoring

Mohammad Mahdi Ahmadi, Graham A. Jullien - Univ. of Calgary

Design of an Ultra-Low Voltage UWB Baseband Processor

Vivienne Sze, Anantha P. Chandrakasan - MIT

HBS: A Handheld Breast Cancer Detector Based on Frequency Domain Photon Migration

Keun Sik No, Qiang Xie, Pai H. Chou - Univ. of California, Irvine

Richard Kwong, Albert Cerussi, Bruce J. Tromberg - Beckman Laser Institute

An Energy-Efficient Reconfigurable Multiprocessor IC for DSP Applications

Guichang Zhong, Alan N. Willson, Jr. - Univ. of California, Los Angeles

The Scale Vector-Thread Processor

Ronny Krashinsky, Christopher Batten, Krste Asanovic - MIT

A 94dB SFDR 78dB DR 2.2MHz BW Multi-bit Delta-Sigma Modulator with Noise Shaping DAC

Jianzhong Chen, Yong Ping Xu - National Univ. of Singapore

A 230mV-to-500mV 375KHz-to-16MHz 32b RISC Core in 0.18 μ m CMOS

Jian-Shiun Chen, Yi-Ming Wang, Yu-Juey Chang, Jinn-Shyan Wang, Tien-Fu Chen, Chingwei Yeh
- Natl. Chung Cheng Univ.

A 152mW/195mW Multimedia Processor with Fully Programmable 3D Graphics and MPEG/H.264/JPEG for Handheld Devices

Jeong-Ho Woo, Ju-Ho Sohn, Hyejung Kim, Hoi-Jun Yoo - KAIST

Euljoo Jeong, Jongcheol Jeong, Suk Joong Lee - Corelogic, Inc.

A 252K gates/4.9Kbytes SRAM/71mW Multi-Standard Video Decoder for High Definition Video Applications

Chih-Da Chien, Yi-Hung Shih, Chien-Chang Lin, He-Chun Chen, Chih-Wei Wang, Cheng-Yen Yu, Jiun-In Guo - Natl. Chung Cheng Univ.

Chih-Liang Chen, Ching-Hwa Cheng - Feng-Chia Univ.