December 2021 CEDA Currents
IEEE Council on Electronic Design Automation

Congratulations to Fellow Class of 2022

IEEE Fellow is a distinction reserved for select IEEE members whose extraordinary accomplishments in any of the IEEE fields of interest are deemed fitting of this prestigious grade elevation.

IEEE CEDA is honored to have elevated six members to the distinction of IEEE Fellow for 2022. Please help us in congratulating the following individuals on this achievement:

Iris Bahar - *for contributions to modeling and design of power-aware and noise-tolerant nanoscale computing systems*

Samarjit Chakraborty - *for contributions to system-level timing analysis of cyber-physical systems*

Luca Daniel - *for contributions to modeling and simulation of electronic systems*

Puneet Gupta - *for contributions to the design and co-optimization of integrated circuits*

Mahesh Iyer - *for leadership in ASIC and FPGA Electronic Design Automation*

Yu Wang - *for contributions to domain specific accelerator design*

Visit the CEDA website to view a full list of CEDA Fellows. You can nominate a deserving colleague here.

Call for Participation: ACM SIGDA/IEEE CEDA Ph.D. Forum at DAC 2021

The Ph.D. Forum at the Design Automation Conference is a poster session hosted by ACM SIGDA for Ph.D. students to present and discuss their dissertation research with people in the EDA community. It has become one of the premier forums for Ph.D. students in design automation to get feedback on their research. It enables the industry and other academicians to see latest top academic work and have access to best graduating students in one place. Participation in the forum is through a scientific evaluation by an expert committee consisting of academia and industry.

The forum is open to all members of the design automation community and is free-of-charge. It is virtually co-located with DAC; DAC registration is not required in order to attend this event. Register on the DAC website.

CEDA Distinguished Speaker Luncheon at DAC 2021 on Tuesday, 7 December 2021

Each year, CEDA invites experts in EDA to present to the Design Automation Conference attendees. This year's IEEE CEDA Distinguished Speaker Luncheon is presented by Tsu-Jae King Liu of UC Berkeley on Tuesday, 7 December, at the Moscone Center in San Francisco, USA.

The talk "Semiconductor Device Innovation for the Age of Ambient Intelligence" will review practical limits for transistor miniaturization are reached, alternative approaches for improving integrated-circuit functionality and energy efficiency at acceptable cost will be necessary to meet growing demand for information and communication technology. This presentation will cover some examples of semiconductor device innovation to enable ubiquitous information systems in the future.

Visit the DAC website to view and download the full 2021 DAC program. Organized by Tsung-Yi Ho, CEDA Vice President Activities.

CEDA Selects Five for Distinguished Lecturer 2022-2023 Class

The IEEE CEDA Distinguished Lecturer Program promotes the field of electronic design automation to the scientific community and the public at large. The goal of the program is to increase awareness about topics relevant to CEDA by creating a pool of subject matter experts and scholars to present to IEEE and CEDA Chapters, Sections and other venues such as universities and companies.

CEDA is excited to announced its 2022-2023 Class of Distinguished Lecturers: Anupam Chattopadhyay, Abu Sebastian, Yiyu Shi, Sheldon Tan, and Mohammad Abdullah Al Faruque.

CEDA has also selected Dr. Hai (Helen) Li of Duke University as its 2022 DL Program Manager. Dr. Li is an IEEE fellow and a distinguished member of the ACM.

A list of approved talks can be found on the website. For more information on how to request a DL at your next event or meeting, please visit the website.

2021 CEDA Virtual Educational Series Reach Over 1,400 Attendees

In 2021, the CEDA Virtual Distinguished Lecturer program hosted 7 online webinars with nearly 650 attendees joining us from 47 countries around the world including those in Africa, the Americas, Europe, and Asia.

Additionally, IEEE CEDA Hardware Security and Trust Technical Committee (HSTTC) in partnership with the University of Florida Nelms Institute for the Connected World, created the CAD for Trust and Assurance website in an academic dissemination effort by researchers in the field of hardware security. There were 10 virtual CAD for

Assurance tool training webinars and panels that reached 725 attendees and 30 countries.

This virtual format provided over 1,400 members of the EDA community greater access to talks from industry experts and invaluable training opportunities.

To view past recordings, visit the Presentation Library.

2021 CEDA Awards

Congratulations to the 2021 Council on Electronic Design Automation Award Recipients on these remarkable achievements. Thank you for your hard work, dedication, and contributions to the EDA Community.

2021 Fellows - Dmitri Maslov, Yung-Hsiang Lu, Gang Qu, and Mehdi Tahoori

Outstanding Service Recognition - Kwang-Ting Tim Cheng (ASP-DAC), Huazhong Yang (ASP-DAC), Giorgio Di Natale (DATE), Yuan Xie (ICCAD), Tulika Mitra (ESWEEK), and Zhuo Li (DAC)

Phil Kaufman Hall of Fame - Jim Hogan and Ed McCluskey

A. Richard Newton Technical Impact Award - John A. Waicukauski, Eric Lindbloom, Barry K Rosen, and Vijay S. Iyengar

William J. McCalla ICCAD Best Paper Award "BOOM-Explorer: RISC-V BOOM Microarchitecture Design Space Exploration Framework" and "Analytical Modeling of Transient Electromigration Stress Based on Boundary Reflections"

Transactions on Computer-Aided Design Donald O. Pederson Best Paper Award "Hardware/Software Co-Exploration of Neural Architectures " and "DREAMPlace: Deep Learning Toolkit-Enabled GPU Acceleration for Modern VLSI Placement"

Ernest S. Kuh Early Career Award - Zheng Zhang and Jeyavijayan Rajendran

A history of past recipients, nomination forms, and eligibility guidelines can be found on the CEDA website.

Call for Papers: ESL Special Issue "Latest Advances in Embedded Systems Research in Latin America"

The IEEE Embedded Systems Letters (ESL) seeks submissions for its upcoming special issue Latest Advances in Embedded Systems Research in Latin America.

In Latin America, a large number of researchers work in the field of Embedded Systems. Their valuable results were published across their universities and geographical region, though not abroad. Recently, that started to change with events like the Argentine Conference on Embedded Systems (CASE) and their partnership with international publications.

In our experience, advances in Embedded Systems made in the region are an exciting contribution to the worldwide scientific community. The potential readers of this Special Issue are researchers, professors, students, and engineers interested in the latest advancements in embedded systems.

Suitable topics include, but are not limited to the following: Embedded Software; Digital Signal Processing for Embedded Applications; Modelling of Embedded Systems; Embedded Systems' Methods and Tools; and Implementation and Design of Embedded Systems.

Submissions are due 1 March 2022. For a full list of topics, guest editors, and guidelines, visit the CEDA website.

Find us online at **ieee-ceda.org**
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Please send contributions to Vasilis F. Pavlidis

Contributions Form

IEEE Embedded Systems Letters is open for submissions

Visit bit.ly/ESLsubmissions

IEEE Design & Test is open for submissions

Visit bit.ly/DTsubmissions

In-Memoriam: Don Thomas, "An Electrifying Legacy"

1951 –2020

Every so often, a professor comes along who has a profound impact on an institution. If you were to ask anyone in the electrical and computer engineering department about Don Thomas, they would first smile, then proceed to tell you just how outstanding of a person he was. Don passed away on March 20, 2020 at the age of 68. The Department of Electrical and Computer Engineering will celebrate his life and accomplishments on November 20, 2021.

Don was a lifelong Tartan. After earning his Ph.D. in computer engineering in 1977, Don continued his Carnegie Mellon journey in various teaching and professor roles in electrical and computer engineering (ECE) until he retired in 2016. His multi-decade legacy was far-reaching and continues to shape the department today.

"Don created a digital circuit design course that was unique to Carnegie Mellon, but is still relevant and highly valued," says Larry Pileggi, department head and Tanoto Professor of Electrical and Computer Engineering. "Most recently it was the first course chosen for sharing with other universities as part of an industry-funded initiative to establish more curriculum for integrated circuits and electronics in the United States."

Known to students as 18-341, the digital circuit design course attracts about 25% of the undergraduate ECE student population. It has become so well-known that corporate companies identified the course as a significant indication of success in those Carnegie Mellon graduates that it hired.

A published author many times over, Don's technical journal papers and textbooks have had a profound influence in electrical and computer engineering at Carnegie Mellon and other institutions. They have had significant sales in Australia, Europe, and Russia, and his most recent textbook has been translated into Russian.

"Don's Verilog textbooks continue to be used in our required course on digital design, and for years computer science students were also required to take the course," says Shawn Blanton, associate department head for research and the Joseph F. and Nancy Keithley Professor of Electrical and Computer Engineering. "This means his work in this area has impacted thousands of graduates, and will continue to do so here at CMU and the many other institutions that have adopted his textbooks."

It is estimated that Don positively influenced every electrical and computer engineering student at Carnegie Mellon University since the late 1970s.

"His textbooks have reached thousands outside of CMU as well," says Bill Nace, teaching professor of electrical and computer engineering. "Through his course, which is being transferred and will be taught at four historically black colleges and universities (HBCUs), he will impact many students outside of CMU."

Creativity and humor were common teaching tactics that Don used in the classroom. He was known for taking complex engineering problems and breaking them down into segments that students could understand and apply.

"He had a great sense of humor," says Nace. "He loved to find a joke that he could fit into a lecture and loved to make others laugh."

Don's commitment to the Department of Electrical and Computer Engineering was undeniable. Whether it was assuming the interim department head role from 1991-1993, or agreeing to direct the Center for Silicone System Implementation from 1998-2000, he was the first to step into a leadership role when needed.

"Don was a member of the first Semiconductor Research Corporation funded center in the country that was awarded to CMU in 1982," says Pileggi. "This was pivotal for the ECE department to become a world leader in electronic design automation for over 25 years."

A dedicated colleague, mentor, and friend, Don Thomas' legacy will live on in the faculty and students who worked with him.

"He has a great legacy," says Nace. "Most professors live on in the ideas and education we pass to our students — graduate students we advise closely or those students who take our courses. Don lives on in the lives of those who have read his textbooks and those who have taken (or taught) his courses. He will be affecting the course of the future in a billion small ways for a very long time."