Special Interest Group Design Automation
The resource for EDA Professionals

1 February 2021, Vol. 51, No. 2
Online archive: http://www.sigda.org/publications/newsletter

Comments from the Editors

Dear ACM/SIGDA members,

Happy New Year 2021!

We are excited to present to you February E-Newsletter. We encourage you to invite your students and colleagues to be a part of the SIGDA newsletter. The newsletter covers a wide range of information from the upcoming conferences and hot research topics to technical news and activities from our community. Get involved and contact us if you want to contribute an article or announcement.

The newsletter is evolving. Please let us know what you think.

Happy reading!

Debjit Sinha, Keni Qiu, Editors-in-Chief, SIGDA E-News

To renew your ACM SIGDA membership, please visit http://www.acm.org/renew or call between the hours of 8:30am to 4:30pm EST at +1-212-626-0500 (Global), or 1-800-342-6626 (US and Canada). For any questions, contact acmhelp@acm.org.

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SIGDA News

(1) "Covid-19: Semiconductors at the Heart of Turmoil"
[https://www.eetimes.com/covid-19-semiconductors-at-the-heart-of-turmoil/]

The Covid-19 pandemic delivered an enormous global shock, leading to a steep recession in many countries. According to the International Monetary Fund (IMF)'s October 2020 predictions, the effects of Covid-19 will result in a 4.4% contraction in the global gross domestic product (GDP) in 2020 — despite the unprecedented policy support that helped to limit the damage.

(2) "The Latest Gadgets Unveiled at CES 2021"
[https://www.eetimes.com/the-latest-gadgets-unveiled-at-ces-2021/]

CES has always been a great conference where companies have shown off their latest technologies and consumer gadgets, since the first CES was held in 1964. While this year's trade show was the first to be an all-digital affair due to the pandemic, it hasn't slowed any of the participating companies and manufacturers from unveiling their latest and most fantastic devices.

(3) "AI Compute Symposium Explores Next-Gen AI 'from Atoms to Apps'"
[https://www.eetimes.com/ai-compute-symposium-explores-next-gen-ai-from-atoms-to-…]

Held over two days in October and supported by the IBM Academy of Technology, the symposium drew more than 650 participants from roughly 45 countries. They joined with the keynoters, presenters, and panelists to explore how research efforts in materials and hardware, compute paradigms, cognitive science, and security might converge to take the next level of artificial intelligence "From Atoms to Applications," as the symposium's promoters put it.

(4) "Rockley Raises a Further $65M"
[https://www.eetimes.com/rockley-raises-a-further-65m/]

Silicon photonics systems specialist Rockley Photonics has raised a further $65 million in funds from new and existing backers to accelerate its development of optical sensing units targeting the global healthcare market.

(5) "Micron Pulls Ahead on DRAM"
[https://www.eetimes.com/micron-pulls-ahead-on-dram/]

Micron Technology has unveiled its 1-alpha node DRAM, which the company said offers a 40% improvement in memory density over its 1z node DRAM, as well as a 15% improvement in power-savings for mobile devices.

(6) "RV64X: A Free, Open Source GPU for RISC-V"
[https://www.eetimes.com/rv64x-a-free-open-source-gpu-for-risc-v/]

A group of enthusiasts is proposing a new set of graphics instructions designed for 3D graphics and media processing. These new instructions are built on the RISC-V base vector instruction set. They will add support for new data types that are graphics specific as layered extensions in the spirit of the core RISC-V instruction set architecture (ISA).

(7) "NXP Targets Wi-Fi 6E Access Points With 6 GHz Tri-Band SoC"
[https://www.eetimes.com/nxp-targets-wi-fi-6e-access-points-with-6-ghz-tri-band-s...]

With the widespread reallocation of the 6 GHz band, the rollout of Wi-Fi 6E devices with its super-wide 160 MHz channels is gaining momentum. With this in mind, NXP Semiconductors is introducing a Wi-Fi 6E tri-band chipset designed for access points and service provider gateways to enable end network devices to take full advantage of the 6 GHz spectrum.

(8) "GSMA Highlights Cost Efficiency of mmWave for 5G"
[https://www.eetimes.com/gsma-highlights-cost-efficiency-of-mmwave-for-5g/]

Millimeter-wave (mmWave) bands can be cost-effective for numerous 5G use cases, particularly when deployed in combination with the mid-band spectrum, the Intelligence Unit of the GSMA suggested in a study released this week.

(9) "Huge Increase in Shipments of 5G Modems, Processors"
[https://www.eetimes.com/huge-increase-in-shipments-of-5g-modems-processors/]

The number of discrete 5G modems shipped last year more than doubled compared with the previous 12 months, and there was a nine-fold increase in the volume of mobile processors sold over the same period, according to the Global mobile Suppliers Association (GSA).

(10) "Auto Industry Chip Shortages Reflect Wider Shortfall"
[https://www.eetimes.com/auto-industry-chip-shortages-reflect-wider-shortfall/]

The failure of auto companies to secure supplies of chips reflects widespread shortages in the semiconductor industry, and there's no crystal ball on when equilibrium will return.

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SIGDA Local Chapter News

The 5th ChinaDA conference was held online on January 30th. More than 300 researchers and students participated in the conference. The conference live broadcast has been watched more than 8,000 times.

Prof. Yiran Chen from Duke University, Prof. Peng Zhou and Prof. Xiaoyang Zeng from Fudan University were invited to give keynote speeches covering the topics of EDA, new devices and circuit design at the conference. Five sessions involving twenty researchers spanned the topics of More Moore and Beyond Moore, New Devices and New Applications, EDA of Analog ICs and New Devices, EDA of Digital ICs, Architecture, ICs, and Open Source at the conference. A panel discussion where six panelists shared their viewpoints on IC design and EDA was scheduled at the end of the conference.

ChinaDA is an academic conference spontaneously organized by young researchers in IC field of China. The aim of ChinaDA is to provide a communication platform for researchers to discuss the hot topics covering design automation, architecture, IC design, and devices. This 5th ChinaDA is supported by ACM SIGDA.

The conference video can be accessed online at https://www.ixigua.com/home/3060630119802862/.

Paper Submission Deadlines

GLSVLSI'21 – ACM Great Lakes Symposium on VLSI
Virtual Conference
Deadline: Feb 18, 2021
Jun 22-25, 2021
http://www.glsvlsi.org

ISVLSI'21 – IEEE Computer Society Annual Symposium on VLSI
Tampa, Florida
Deadline: Feb 21, 2021
Jul 7-9, 2021
http://www.eng.ucy.ac.cy/theocharides/isvlsi21/

LCTES'21 – ACM Int'l Conference on Languages Compilers, Tools and Theory of Embedded Systems
Virtual conference
Deadline: Mar 1, 2021
Jun 20-25, 2021
https://pldi21.sigplan.org/home/LCTES-2021

DAC'21 – Design Automation Conference
San Francisco
Deadline: Mar 5, 2021 (Late Breaking Results)
Jul 11–15, 2021
http://www.dac.com/

ISLPED'21 – ACM/IEEE Int'l Symposium on Low Power Electronics and Design
Hybrid Zoom/Boston, MA
Deadline: Mar 15, 2021 (Abstracts due: Mar 8, 2021)
Jul 26-28, 2021
http://www.islped.org

MDTS'21 – IEEE Microelectronics Design & Test Symposium
Virtual workshop
Deadline: Mar 30, 2021
May 19-21, 2021
http://natw.ieee.org

ESWEEK'21 - Embedded Systems Week (CASES, CODES+ISSS, and EMSOFT)
Virtual Conference
Deadline: Apr 9, 2021 (Abstracts due: Apr 2, 2021)
Oct 10-15, 2021
http://www.esweek.org

PACT'21 - Int'l Conference on Parallel Architectures and Compilation Techniques
Virtual Conference
Deadline: Apr 19, 2021 (Abstracts due: Apr 15, 2021)
Sept 26-28, 2021
http://www.pactconf.org

ISED'21 – 10th Int'l Symposium on Embedded Computing & System Design
Kollam, India
Deadline: Apr 25, 2021
Jul 16-18, 2021
http://isedconf.org

VLSI-SoC'21 – IFIP/IEEE Int'l Conference on Very Large Scale Integration
Singapore
Deadline: Apr 26, 2021 (Abstracts due: Apr 19, 2021)
Oct 5-7, 2021
http://www.vlsi-soc.com

MICRO'21 – IEEE/ACM Int'l Symposium on Microarchitecture
Athens, Greece
Deadline: to be announced
Oct 16-20, 2021
http://www.microarch.org/micro54

Upcoming Conferences and Symposia

DATE'21 - Design Automation and Test in Europe
Grenoble, France
Feb 1-5, 2021
http://www.date-conference.com

ISSCC'21 – IEEE Int'l Solid-State Circuits Conference
San Francisco, CA
Feb 14-18, 2021
http://isscc.org

VLSID'21 – International Conference on VLSI Design & International Conference on Embedded
Systems
Virtual Conference
Feb 20-24, 2021
http://embeddedandvlsidesignconference.org/

FPGA'21 – ACM/SIGDA Int'l Symposium on Field-Programmable Gate Arrays
Virtual Conference
Feb 28-Mar 2, 2021
http://www.isfpga.org

ISPD'21 – ACM Int'l Symposium on Physical Design
Mar 21-24, 2021
http://www.ispd.cc

ISQED'21 - Int'l Symposium on Quality Electronic Design
Virtual Conference
Apr 7-8, 2021
http://www.isqed.org

TAU'21 – ACM Int'l Workshop on Timing Issues in the Specification and Synthesis of Digital
Systems
Monterey, CA

Apr 8-9, 2021
http://www.tauworkshop.com

FCCM' 21 - The 29th IEEE International Symposium On Field-Programmable Custom Computing Machines
Orlando, FL
May 9 – May 12, 2021
https://www.fccm.org/

RTAS'21 – 27th IEEE Real-Time and Embedded Technology and Applications Symposium
Nashville, USA
May 18-21, 2021
http://2021.rtas.org

ISCA'21 – Int'l Symposium on Computer Architecture
Valencia, Spain
May 22 – 26, 2021
https://iscaconf.org/isca2021/

ISCAS'21 – IEEE Int'l Symposium on Circuits and Systems
Daegu, Korea
May 23-26, 2021
http://iscas2021.org

DAC'21 – Design Automation Conference
San Francisco
Jul 11 - 15, 2021
http://www.dac.com/

SIGDA Partner Journal

To the members of the ACM Design Automation Community,

The ACM Transactions on Design Automation of Electronic Systems is seeking nominations for the 2021 TODAES Best Paper Award. The nomination deadline is February 15, 2021.

All papers published in the ACM TODAES between January 2019 and December 2020 are eligible. The best paper will be selected based on originality, timeliness, potential impact and overall quality. The award will be announced and recognized during the 2021 Design Automation Conference, July 11-15, 2021, San Francisco, CA.

A nomination should include the following material:

• Name and email of the nominator
• Title and author list of the paper, and the issue in which the paper was published
• A brief supporting statement of no more than 150 words
• A PDF copy of the paper
Submit the nomination by February 15, 2021 via e-mail to Matthew Morrison, Managing Editor of TODAES, at matt.morrison@nd.edu.

Both nominations by peers and self-nominations are welcome.

Technical Activities

1. "EDA updates; Indy Autonomous Challenge; Qualcomm-Nuvia deal; RRAM-based edge learning; robomorphic computing"

More about the Indy race below, after some EDA news. Other updates this week concern CPUs, machine learning, and robotics...
[https://www10.edacafe.com/blogs/editorial]

2. "Addressing Cybersecurity Risks in the Industrial Cloud"

Cloud and edge computing have come to the industrial world and they're here to stay. Whether one thinks that's a good or bad thing, it's now inevitable...
[https://www.eetimes.eu/addressing-cybersecurity-risks-in-the-industrial-cloud/]

3. "Technical considerations when designing building automation solutions"

As the world of Internet of Things technologies continues to grow and expand, we are now seeing these modern-day solutions brought into areas outside the consumer world, including vehicle, industrial, and more...
[https://iot.eetimes.com/technical-considerations-when-designing-building-automat...]

4. "Wireless Tech Roadmap to Push for Wi-Fi & Cellular Convergence"

The Wireless Broadband Alliance (WBA) argues that cellular and Wi-Fi sectors ought to converge as fast and as extensively as possible...
[https://www.eetasia.com/wireless-tech-roadmap-to-push-for-wi-fi-cellular-converg...]

Job Openings:
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1. New York University Division of Engineering United States

Job Title: Professor of Electrical and Computer Engineering

Description: The Division of Engineering at NYU Abu Dhabi is searching for rising scholars to conduct important research and teach the next generation of global leaders. You are invited to apply for a tenure-track position in the Communications Area within the Electrical and Computer Engineering (ECE) program. Preference will be given in wireless communications. The available opening is at the Assistant or Associate Professor level. The ECE-program has invested in optical communications, robotics and cybersecurity and there are exceptional facilities in these areas. Faculty in NYUAD's ECE have close collaboration with their colleagues at NYU's ECE and CSE departments. NYUNY is well known globally for its research in Communications, Networking and Signal Processing, and Machine Learning. NYUAD's Global PhD student fellowship program assists in tightening this collaboration and sharing knowledge and expertise. To apply for this position, please submit the following items: CV Cover Letter; Teaching Statement Research Statement; Names and contact information for three (3) references. (Only referees of shortlisted candidates will be contacted.) We will begin reviewing applications on March 1, 2021, on a rolling basis. Shortlisted candidates are expected to be invited for campus visits in Abu Dhabi and New York early Spring 2021. We anticipate that successful candidates can start the appointment and relocate to Abu Dhabi in the academic year 2021-2022. NYUAD is committed to equality and is an equal opportunity employer. We encourage applications from candidates who will enrich and contribute to the cultural and ethnic diversity of our University. For questions about this position, please email nyuad.engineering@nyu.edu, or contact the ECE-program head anthony.tzes@nyu.edu.

2. Tokyo Institute of Technology, School of Computing (Dept. of Computer Science)

Job Title: Professor

Description: Area of Specialization: Software engineering, especially associated with artificial-intelligence, IoT, Cyber-Physical System approaches. It requires: (1) organizing and managing the curricula of undergraduate and graduate lectures, and conducting the lectures in the area of software engineering (both in Japanese and English). Especially, the successful applicant may be asked to join the faculty members who organize, manage, and conduct the programs like: Education Program for Information Technology Specialists, Progressive Graduate Minor in Data Science and Artificial Intelligence, Progressive Graduate Minor in Cybersecurity, Information Literacy and Computer Science for all the first-year students in the institute. (2) Research and supervising researches for undergraduate and graduate students in the above research fields (both in Japanese and English) (3) Works for governing the university, school and department. Especially, the successful applicant may be asked to support software system procurement in the institute, collaborating with Global Scientific Information and Computing Center (GSIC). For more information, please contact Katsuhiko Gondow via E-mail: koubo2020@sde.cs.titech.ac.jp, or refer to the following link: http://www.hyoka.koho.titech.ac.jp/eprd/recently/koubo/koubo.php?lang=en

3. University of North Carolina Chapel Hill Department of Computer Science United States

Job Title: Assistant Professor in Computer Science

Description: The Computer Science Department of the University of North Carolina at Chapel Hill invites applications for tenure-track faculty positions at the level of Assistant Professor to begin on or after July 1, 2021. We are seeking candidates who embrace excellence in research and teaching, and have a commitment to diversity, mentoring and collaboration. We are conducting a broad-area search for candidates with a strong research record in areas including, but not limited to, the following: security, data science, computer vision, computer systems, robotics, biological computing, and augmented and/or virtual reality. If you experience any problems accessing the system or have questions about the application process, please contact the University's Executive Vice Chancellor and Provost office at (919)-962-1091 or send an email to facultyrecruitment@unc.edu. Please note: The Executive Vice Chancellor & Provost office will not be able to provide specific updates regarding position or application status.

Notice to Authors

This newsletter is a free service for current SIGDA members and is added automatically with a new SIGDA membership.
Circulation: 2,700