Comments from the Editors

Dear ACM/SIGDA members,

We are excited to present to you the May 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 funding deadlines, hot research topics to news and technical activities from our community. Get involved and contact us if you want to contribute an article or announcement.

The newsletter is evolving, 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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'''Xin Zhao''', E-Newsletter Associate Editor for SIGDA Paper submission deadline column

'''Ying Wang''', E-Newsletter Associate Editor for SIGDA Technical activities column

SIGDA News

(1) "Covid-19 Spurs 8 Strategies to Boost China's Major-Appliance Sales"
[https://www.eetimes.com/covid-19-spurs-8-strategies-to-boost-chinas-major-applia...]

Although growth in China's home appliance market is stagnating (see China's Booming Home Appliance Market Hits a Wall), there are still some reasons for optimism as manufacturers and retailers adjust their go-to-market strategies. Here are eight trends that could reboot sales of washers and dryers, air conditioners and kitchen appliances.

(2) "China's Booming Home Appliance Market Hits a Wall"
[https://www.eetimes.com/chinas-booming-home-appliance-market-hits-a-wall/]

After many years of growth, China's home appliance industry has entered a mature consumption stage. A lack of new demand has plagued the market in recent years, and the outlook for 2020 isn't rosy.

(3) "AI Chip Market Will Hit $70B in 2026"
[https://www.eetimes.com/ai-chip-market-will-hit-70b-in-2026/]

The worldwide market for AI accelerator chipsets is predicted to grow from $8 billion in 2019 to reach $70 billion by 2026, according to a new report by analysts Global Market Insights (GMI). This represents a remarkable uptake in the technology from its present position — a CAGR of 35%.

(4) "Chip Demand to Drop 5% to 15% in 2020"
[https://www.eetimes.com/report-chip-demand-to-drop-5-to-15-in-2020/]

With each passing week of what the IMF has taken to calling the Great Lockdown, the semiconductor industry has been adjusting its economic forecasts downward. McKinsey is the latest to chime in; it said it expects sales demand in the global chip market will decline between 5% and 15% in 2020, with steep declines anticipated for some IC market segments that will overwhelm the gains it still expects in others. That's the most dire projection thus far.

(5) "Global Semiconductor Capex Forecast to Drop 3% in 2020"
[https://www.eetimes.com/global-semiconductor-capex-forecast-to-drop-3-in-2020/]

Although the semiconductor industry's capital spending (capex) forecast will decline by 3% this year, that figure hasn't been lowered due to the Covid-19 outbreak.

[6] "5G and HPC Drive 45% Q1 Revenue Growth at TSMC"
[https://www.eetimes.com/5g-and-hpc-drive-45-q1-revenue-growth-at-tsmc/]

TSMC this week reported 45.2% revenue growth for Q1 2020 compared to the same period last year, driven by 5G and high-performance computing (HPC) products. However, compared to Q4 2019 it declined marginally by 0.8%, and the outlook for the second quarter of 2020 is flat.

[7] "Neuromorphic Vision Sensors Eye the Future of Autonomy"
[https://www.eetimes.com/neuromorphic-vision-sensors-eye-the-future-of-autonomy/]

Neuromorphic vision sensors are bio-inspired cameras that capture the vitality of a scene, mitigating data redundancy and latency. Event-based, these sensors bring autonomy closer to reality and find utility in high-speed, vision-based applications in areas such as industrial automation, consumer electronics and autonomous vehicles.

[8] "Virtual Conference Delivers Real Chips"
[https://www.eetimes.com/virtual-conference-delivers-real-chips/]

The virtual Linley Spring Processor Conference was heavily influenced by AI chips and IP from both established

companies and startups, much like last year's Fall Processor Conference. This is a trend that shows no sign of abating any time soon. Some of the presenting companies were repeats from the fall, but many made significant product announcements. And, like the fall conference, not all the news was AI related — SiFive, for example, had two presentations touting the new RISC-V vector instruction set extensions.

[9] "FRAM's Future is Higher Densities"
[https://www.eetimes.com/frams-future-is-higher-densities/]

Much of the emerging memory chatter of late has been over ReRAM, MRAM, and PCRAM in the form of 3D Xpoint. But ferroelectric RAM (FRAM) has had a lot of success getting used in small, niche appliances.

[10] "Startup Reinvents Neural Network Maths, Launches 20mW Edge AI Chip"
[https://www.eetimes.com/startup-reinvents-neural-network-maths-launches-20mw-edg...]

A silicon valley startup claims it has reinvented the mathematics of neural networks and has produced a complementary edge AI chip, already sampling, which does not use the usual large array of multiply-accumulate units. The chip can run the equivalent of 4 TOPS, with impressive power consumption of 55 TOPS/W, and according to the company, achieves data-center class inference in under 20mW.

Paper Submission Deadlines

VLSI-SoC'20 – IFIP/IEEE Int'l Conference on Very Large Scale Integration
Salt Lake City, UT
Deadline: May 11, 2020 (Abstracts due: May 4, 2020)
Oct 5-7, 2020
http://www.vlsi-soc.com

NOCS'20 – IEEE/ACM Int'l Symposium on Networks-on-Chip (co-located with ESWEEK'20)
Hamburg, Germany
Deadline: May 15, 2020 (Abstracts due: May 7, 2020)
Sept 24-25, 2020
http://nocs2020.engr.uky.edu/

BodyNets'20 – Int'l Conference on Body Area Networks
Tallinn, Estonia
Deadline: May 22, 2020
Oct 21-22, 2020
http://www.bodynets.org

ICCAD'20 – IEEE/ACM Int'l Conference on Computer-Aided Design
San Diego, CA
Deadline: May 28, 2020 (Abstracts due: May 21, 2020)
Nov 2-5, 2020
http://www.iccad.com

IWBDA'20 - Int'l Workshop on Bio-Design Automation
Online
Deadline: June 5, 2020
Aug 3-5, 2020
http://www.iwbdaconf.org/2020

HiPC'20 – IEEE Int'l Conference on High Performance Computing, Data, And Analytics
Pune, India
Deadline: June 15, 2020 (Abstracts due: June 8, 2020)
Dec 16-19, 2020
http://www.hipc.org

iSES'20 – IEEE Int'l Symposium on Smart Electronic Systems
Chennai, India
Deadline: July 31, 2020
Dec 14-16, 2020
http://www.ieee-ises.org

Upcoming Conferences and Symposia

ASYNC'20 – IEEE Int'l Symposium on Asynchronous Circuits and Systems
Publication only
http://asyncsymposium.org

ISCA'20 – Int'l Symposium on Computer Architecture
Virtual
May 30 – Jun 3, 2020
https://iscaconf.org/isca2020/

NATW'20 – IEEE North Atlantic Test Workshop
Virtual workshop
June 10 & 17, 2020
http://natw.ieee.org

LCTES'20 – ACM Int'l Conference on Languages Compilers, Tools and Theory of Embedded Systems
Virtual conference
Jun 15-20, 2020
https://conf.researchr.org/home/LCTES-2020

ISVLSI'20 – IEEE Computer Society Annual Symposium on VLSI
Limassol, Cyprus
Jul 6-8, 2020
http://www.isvlsi.org

ICDCS'20 – IEEE Int'l Conference on Distributed Computing Systems
Singapore
Jul 8-10, 2019
https://icdcs2020.sg

DAC'20 – Design Automation Conference
San Francisco, CA
Jul 19-23, 2020
http://www.dac.com/

ISLPED'20 – ACM/IEEE Int'l Symposium on Low Power Electronics and Design
Boston, MA
Aug 10-12, 2020
http://www.islped.org

ESWEEK'20 - Embedded Systems Week (CASES, CODES+ISSS, and EMSOFT)
Hamburg, Germany
Deadline: Apr 17, 2020 (Abstracts due: Apr 3, 2020)
Sept 20-25, 2020
http://www.esweek.org

GLSVLSI'20 – ACM Great Lakes Symposium on VLSI
Beijing, China
Sept xxxx, 2020
http://www.glsvlsi.org

PACT'20 - Int'l Conference on Parallel Architectures and Compilation
Techniques
Atlanta, GA
Oct 3-7, 2020
http://www.pactconf.org

ISCAS'20 – IEEE Int'l Symposium on Circuits and Systems
Seville, Spain
Oct 11-14, 2020
http://iscas2020.org

MICRO'20 – IEEE/ACM Int'l Symposium on Microarchitecture
Athens, Greece

Oct 17-21, 2020
http://www.microarch.org/micro53

HOST'20 – IEEE Int'l Symposium on Hardware-Oriented Security and Trust
San Jose, CA
TBD (postponed later this year)
http://www.hostsymposium.org

Call for Submissions - ACM SIGDA/IEEE CEDA Ph.D. Forum at DAC 2020

Call for Submissions: ACM SIGDA/IEEE CEDA Ph.D. Forum at DAC 2020
https://www.sigda.org/sigda-events/phd-forum/

DEADLINE: April 22, 2020 (Extended)

DAC Ph.D. Forum
San Francisco, CA | July 19-23

The Ph.D. Forum at the Design Automation Conference is a poster session hosted by ACM SIGDA and IEEE CEDA 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 and for industry to see academic work in progress: hundreds of people attended the last forums. Participation in the forum is competitive with acceptance rate of around 30%. Limited funds will be available for travel assistance, based on financial needs. The forum is open to all members of the design automation community and is free-of-charge. It is co-located with DAC to attract the large DAC audience, but DAC registration is not required in order to attend this event.

Eligibility

- Dissertation topic must be relevant to the DAC community.
- Students with at least one published or accepted conference, symposium or journal paper.
- Students within 1-2 years of dissertation completion and students who have completed their dissertation during the 2019-2020 academic year. Students closer to graduation will have higher priority since the rest of the students can attend the PhD Forum 2021 with more mature results.
- Students who have presented previously at the DATE and ASP-DAC Ph.D. forums are eligible, but will be less likely to receive travel assistance.
- Previous forum presenters are not eligible.

Important Dates

Abstract Submission: April 22, 2020
Submission Link: https://easychair.org/conferences/?conf=daforum20
Notification Date: May 8, 2020
Forum Presentation Time: Tuesday, July 21, 2020, 7-9PM
Location: Moscone West, San Francisco, Room 3022-3024

Submission Requirements

A two-page PDF abstract of the dissertation (in two-column format, using 10-11 pt. fonts and single-spaced lines), including name, institution, advisor, contact information, estimated (or actual) graduation date, whether the work has been presented at ASP-DAC Ph.D. Forum or DATE Ph.D. Forum, as well as figures, and bibliography (if applicable). The two-page limit on the abstract will be strictly enforced: any material beyond the second page will be truncated before sending to the reviewers. Please include a description of the supporting paper, including the publication forum. A list of all papers authored or co-authored by the student, related to the dissertation topic and included in the two-page abstract, will strengthen the submission.
The submission should also include a published (or accepted) paper, in support of the submitted dissertation abstract. The paper must be related to the dissertation topic and the publication forum must have a valid ISBN number. It will be helpful, but is not required, to include your name and the publication forum on the first page of the paper. Papers on topics unrelated to the dissertation abstract or not yet accepted will not be considered during the review process.

Please Note:

- The abstract is the key part of your submission. Write the abstract for someone familiar with your technical area, but entirely unfamiliar with your work. Clearly indicate the motivation of your Ph.D. dissertation topic, the uniqueness of

your approach, as well as the potential impact your approach may have on the topic.
- In the beginning of the abstract, please indicate to which track your submission belongs to.
- Proper spelling, grammar, and coherent organization are critical: remember that the two pages may be the only information about yourself and your PhD research available to the reviewers.
- All submissions must be made electronically.
- Please include the supporting paper with the abstract in one PDF file and submit the single file. There are many free utilities available online which can merge multiple PDF files into a single file if necessary.

Topics of Interest

- System-level Design, Synthesis and Optimization (including network-on-chip, system-on-chip and multi/many-core, HW/SW co-design, embedded software issues, modeling and simulation)
- Internet of Things (IoT)
- Autonomous Systems
- High Level Synthesis, Logic Level Synthesis
- Power and Reliability Analysis and Optimization (including power management from system level to circuit level, thermal management, process variability management)
- Timing Analysis, Circuit and Interconnect Simulation
- Physical Design and Manufacturability
- Signal Integrity and Design Reliability
- Verification, Testing, Pre- and Post-Silicon Validation, Failure Analysis
- Reconfigurable and Adaptive Systems
- Analog/Mixed Signals and RF
- Hardware Security
- Machine learning/AI
- Printable and flexible hybrid electronics (FHE)
- Emerging Design, Technologies, and Computing Methods (carbon nanotubes, molecular electronics, MEMS, microfluidic system, biologically-inspired systems, quantum computing, etc.)

Contact Information

For questions not addressed on this page, please send e-mail to Dr. Ogras (umit@asu.edu) or Dr. Topaloglu (rasit@us.ibm.com). Please include "DAC Ph.D Forum" in the subject line of your email.

Organizing Committee

Umit Ogras, Arizona State University (Chair)
Rasit Topaloglu, IBM
Iris Hui-Ru Jiang, National Taiwan University
Yiyu Shi, University of Notre Dame (SIGDA Representative)

Technical Activities

(1) "How the COVID-19 pandemic will push creation of smart healthcare"
The COVID-19 pandemic has shaken the world as nations struggle to keep the coronavirus infection rate and deaths low. With much of the world under lockdowns, many health experts believe effective testing and contact tracing are two things that must be in place as soon as possible.
[https://iot.eetimes.com/how-the-covid-19-pandemic-will-push-creation-of-smart-he...]

(2) "FD-SOI Spice Model Approved by Chip Industry"
The Compact Model Coalition (CMC), a working group of the major semiconductor companies and a part of the Silicon Integration Initiative (Si2), has approved CEA-Leti's L-UTSOI simulation model developed for FD-SOI technologies as a chip industry standard.
[https://www.eetimes.eu/fd-soi-spice-model-approved-by-chip-industry/]

(3) "Foundry Revenue to Undergo Single-Digit Growth in 2020 Foundry Revenue to Undergo Single-Digit Growth in 2020"
Total foundry revenue in 2020 is expected to reach 5%-9% YoY growth, with 6.8% being the median...
[https://www.eetasia.com/foundry-revenue-to-undergo-single-digit-growth-in-2020/]

(4) "Arm Offers Silicon Startups Zero-cost Access to the World's Most Widely Used Chip Designs"
Arm Flexible Access for Startups offers no-cost access to the world's most trusted IP portfolio, tools, training and full support for early-experimentation, design and prototype silicon.
[https://www.edacafe.com/nbc/articles/1/1749751/Arm-Offers-Silicon-Startups-Zero-...]

Job Openings:
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(1) The Hong Kong University of Science and Technology (Guangzhou)

Job Title: Founding Faculty in the Information Hub (Artificial Intelligence (AI))

Description: The Hong Kong University of Science and Technology (HKUST) invites applications for founding faculty positions at all levels at Professor, Associate Professor and Assistant Professor rank in Artificial Intelligence (AI) for its new campus in Guangzhou (GZ). Candidates should have a demonstrated ability to pursue high-impact research in AI and its applications. We specifically look for candidates interested in applied AI research who are able to collaborate closely with domain experts in the target application areas to develop transformative technologies using AI. The initial focus areas include, but are not limited to, AI in design, AI in finance, AI in manufacturing, AI in medicine, AI in security and privacy, and AI in smart living. We welcome senior candidates to apply, especially those who can help with the strategic development of the AI trust area for the new Guangzhou campus. Candidates for all ranks must have a PhD degree in related disciplines.
Applications should be sent to <gzrecruitINF@ust.hk> together with (i) full CV; (ii) a statement of research, teaching, and service; (iii) up to five most representative publications in PDF formats; (iv) record of teaching performance (if any); and (v) names and contact information of three referees. Review of applications will continue until the positions are filled.

(2) Department of Science and Engineering, Penn State University

Job Title: Assistant Professor of Information Sciences and Technology

Description: The Division of Science and Engineering at Penn State University Abington College is seeking a Tenure-track Assistant Professor of Information Sciences Technology (Cybersecurity) to start in August of 2020. This is a nine-month appointment with excellent fringe benefits that include retirement plans, health, dental, vision, and prescription drug insurance, reduced tuition rates for dependents, and optional long-term disability insurance. The review process will begin on February 24th and continue until the positions are filled.
Minimum qualifications are: a Ph.D. in Cybersecurity, Information Systems, or Data Communication and Networking; knowledge of standardization, including ISO, ITU_T, BSI, ANSI, NIST and NICE; and knowledge of CISSP, CISA, CEH and/or SSCP certification. Preference will be given to candidates with the one or more of the following: experience in teaching ethical hacking, offensive security, digital forensics, malware analysis, and legal and regulatory issues in information security and privacy; and teaching experience at the undergraduate level, involving students from diverse ethnic, racial, and socio-economic backgrounds. The successful candidate will be expected to: teach nine contact hours per semester; advise a variety of IST and Cybersecurity majors; develop a robust research program that involves undergraduate students and can lead to external grant funding; and provide service to the Division and College. Applicants should submit: a cover letter; a curriculum vitae, including the names and contact information of at least three references; a list of courses taught at the university level; and a statement of teaching philosophy. Penn State Abington is a thriving four-year college of The Pennsylvania State University and is conveniently located on a picturesque suburban campus near Philadelphia. Penn State Abington serves racially- and ethnically-diverse students, first-generation college students, students from a range of socio-economic backgrounds, and a significant international student population. Candidates should demonstrate a commitment to helping all students succeed through engagement in and out of the classroom. For more information about the college, visit https://www.abington.psu.edu/.

(3) University of Thessaly, Department of Electrical and Computer Engineering, Greece

Title: Assistant / Associate Professor in 'Data Sciences and Applications'

Description: We take a broad and multi-faceted view of Data Science. All areas of expertise related to Data Science and its applications will be considered.
We are looking for Greek-speaking individuals who have a strong track record of research excellence, a passion to shape the future of the field, and the potential to become an outstanding leader in research and education. The new faculty will have opportunities to design courses that align with their research interests. More information about the department may be found at https://www.e-ce.uth.gr/.

(4) College of the North Atlantic Qatar, Qatar

Title: Assistant Professor of Electrical Engineering

Description: With more than 600 staff and 3,000 students, CNA-Q is one of Qatar's largest post-secondary institutions offering over 26 diploma programs through student-centered learning. By providing training in a range of technical areas including Engineering Technology, Health Sciences, Industrial Trades, Business Studies and Information Technology, CNA-Q brings the State closer to the goals of the Qatar National Vision, 2030.

You will report to the Department Chair of Electrical, Instrumentation and Telecommunications Engineering, the successful candidate will be responsible for the development, delivery and evaluation of a broad range of courses within the Telecommunications and Network Engineering programs. S/he will evaluate student progress and manage the resources of the learning environment. Faculty members will keep course portfolio documents required for accreditation processes and engage in instructional development/improvement plans. All employees are expected to contribute to professional and community life within the College and beyond. Applications should be submitted via our online application portal https://careers.cna-qatar.com/en/qatar/jobs/assistant-professor-electrical-engin...

(5) Catholic University of Leuven Department of Computer Science

Title: Professor in Secure Software Development

Description: DistriNet is an international research group with extensive expertise in secure & distributed software. Embedded in the Department of Computer Science of KU Leuven, DistriNet brings together a substantial critical mass of +/- 90 researchers, including 12 full-time professors, 10 permanent research staff members, 11 postdoctoral researchers, and about 60 PhD researchers. The conducted research is systems-centric, always application-driven and often performed in close collaboration with industry (e.g. in industrial automation, healthcare, transport & logistics). The know-how of DistriNet formed the basis of multiple spin-off companies (https://distrinet.cs.kuleuven.be/spinoffs/). DistriNet has a solid track record in Secure Software Development, and is looking for new colleagues on several topics in this research domain.

The topic is to be agreed and can include any of the following: Vulnerability discovery, exploitation, mitigation and countermeasures, Secure runtimes and code instrumentation, Security testing, Secure programming guidelines, Tooling support for developing secure software (DevSecOps), Security Metrics. Your research may lead to a PhD trajectory in computer science, but this is not a mandatory objective.

For more information please contact Mr. Pieter Philippaerts, via mail: pieter.philippaerts@kuleuven.be or Mr. Dimitri Van Landuyt, tel.: +32 16 32 76 50, mail: dimitri.vanlanduyt@kuleuven.be.

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