



Special Interest Group on Design Automation **ACM/SIGDA E-NEWSLETTER**, Vol. 53, No. 8

SIGDA - The Resource for EDA Professionals

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Circulation: 2,700

Online archive: <https://www.sigda.org/publications/newsletter>

SIGDA News

1. [Wearable XR Near-Eye Display Shipments to Soar](#)

According to a report for Omdia, near-eye display shipments for XR (Extended Reality) applications, including AR (Augmented Reality), VR (Virtual Reality), and MR (Mixed Reality) are expected to grow 56% year-on-year (YoY) to 21.4 million units in 2023.

2. [Open RAN Equipment Market Forecast 2023-2030](#)

Open RAN deployments will ramp up to \$19.2bn by 2030 as interoperability standards and testing mature says a new report from Rethink Technology Research in the UK.

3. [FMD and Intel to Accelerate Research on 3D Heterogeneous Integration](#)

In a series of technical workshops organized by FMD and Intel Europe Research, experts from FMD, Intel, and German industries have in defined the 2030+ research roadmap for 3D heterogeneous integration.

4. [TSMC Opens Global R&D Centre for 1nm Push](#)

TSMC has opened its global Research and Development Center in Hsinchu, Taiwan, that will drive the next generations of semiconductor technology.

5. [AMD to Spend \\$400m for Indian Design Centre](#)

AMD is to spend \$400m over the next five years to expand its research, development and engineering operations in India.

Messages from the EiCs

Dear ACM/SIGDA members,

We are excited to present to you August 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 to technical news and activities of our community. Get involved and contact us if you want to contribute articles or announcements.

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

Happy reading!

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

6. [Intel Sees AI Boost in Q2](#)

The boom in machine learning and AI in the data centre has boosted Intel's results in Q2 despite continuing weakness in the enterprise and Chinese markets.

7. [Huawei Plans to Use SMIC's 'Nearly-7nm' Process](#)

China's telecommunications giant Huawei Technologies is planning to restart designing mobile phone chips, circumventing export controls, according to Nikkei.

8. [Heat-Resistant Ceramic Ink for Data Codes on Metal Components](#)

For the first time, this enables metal components processed in the automotive industry at temperatures over 1,000 °C to be marked with a code. The code can be scanned and is linked to a database in which all the manufacturing parameters for the component in question are stored.

What is

Contributing author: Sudeep Pasricha, Colorado State University

AE: Muhammad Shafique

What is Optical Computing?

Traditional computing relies on electrons to perform computations (with transistors) and communication (via metallic interconnects). An optical computer performs communication and computation with photons as opposed to electrons. Given how electronic computing systems are reaching their limits in terms of transistor sizes, power dissipation, and data movement bottlenecks, there is growing interest today in exploring optical computing as an alternative to achieving high performance and energy efficiency for emerging workloads, such as increasingly complex machine learning and AI applications.

Recent efforts have shown how it is possible to design optical logic gates (such as AND, OR, XOR) using optoelectronic devices that include microdisks and microrings [1]. It is also possible to perform scalar and vector multiplications in the optical domain by manipulating the

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Yanzhi Wang,
AE for Local chapter news

Xunzhao Yin,
AE for Awards

amplitude and phase of optical signals using these and other devices, which is extremely useful for accelerating neural networks and other data-intensive computations [2]. Broadly, optical computing platforms can be classified as either coherent or non-coherent.

Coherent optical computing platforms typically use a single wavelength and Mach-Zehnder interferometer (MZI) devices to manipulate electrical-field phase of an optical signal. The optical phase shift is utilized to perform operand imprinting and computation operations, such as multiplication. Cascaded MZIs arranged in a mesh are capable of performing large-scale and high-throughput matrix-matrix and matrix-vector multiplication. Recent commercially released optical computing accelerators for AI workloads from companies such as LightMatter make use of such coherent computing principles. However, coherent systems and their related devices have a high area footprint, and thus have very low compute densities. Such systems can also suffer from increased error propagation, e.g., across stages of MZI devices, which reduces computational reliability [3].

Non-coherent (a.k.a. in-coherent) optical computing platforms make use of multiple wavelengths and amplitude modulation with them to perform computations [2]. To imprint operands, these accelerators typically rely on wavelength-selective filtering and modulation capabilities of microring resonator (MR) devices. MRs are used to perform amplitude modulation on different wavelengths using a tuning circuit that modifies the operational characteristics of the MRs, to imprint the operands. The resulting non-coherent platforms make use of the much more compact MR devices instead of larger MZIs, and thus have much higher compute densities than coherent platforms. Non-coherent platforms also have lower error propagation, crosstalk, and optical signal losses.

There are many open challenges with realizing energy-efficient and high throughput non-coherent optical computing [2]. These challenges can arise from different layers of the system design stack. For optical computing platforms, the layers of the design stack include the device layer, circuit layer, architecture layer, and the software layer. At the device layer, there is a need to efficiently address fabrication process variations and runtime thermal variations that impact all optoelectronic devices. At the circuit level, there is a need for fast tuning mechanisms and compact circuits for logic operations. At the architecture level, there is a need for innovative clustering of basic blocks to create specialized computation engines that meet the demands of diverse workloads. At the software level, there is a need for efficient dataflow mapping and orchestration of computations on optical computing fabrics.

The challenges mentioned above represent difficult problems. They require innovative cross-layer solutions that exploit the interactions and

Xun Jiao,

AE for What is

Muhammad Shafique,

AE for What is

Rajsaktish Sankaranarayanan,

AE for Researcher spotlight

Xin Zhao,

AE for Paper submission

Ying Wang,

AE for Technical activities

Jiaqi Zhang,

AE for Technical activities

Paper Deadlines

ASP-DAC'24 - Asia and South Pacific Design Automation Conference

Incheon Songdo Convensia, South Korea

Deadline: Aug. 4, 2023

Abstracts due: July 28, 2023

Jan. 22-25, 2024

<http://www.aspdac.com>

VLSID'24 – International Conference on VLSI Design & International Conference on Embedded Systems

ITC Royal Bengal, Kolkata, India

Deadline: July 30, 2023

Jan. 6-10, 2024

<https://vlsid.org/>

HOST'24 – IEEE Int'l Symposium on Hardware-Oriented Security and Trust

Washington DC

Deadline (fall submission): Aug. 28, 2023

dependencies between design layers and optimize them jointly to enhance system performance more efficiently than single-layer solutions [4]. There has been promising work recently in utilizing cross-layer design techniques to build optical computing platforms that can accelerate a variety of AI and machine learning workloads, such as those based on DNNs and CNNs [5], sequence learning models (RNNS, LSTMS, GRUs) [6], and transformer neural networks [7]. New approaches that exploit 2.5D platforms for scalable optical computing [8] and hardware-software co-design techniques for adapting optical computing to edge/IoT environments [9], [10] have also been recently presented. But a lot more work remains to be done to solve persistent and emerging challenges in this area, making optical computing an exciting topic for research and development going forward.

References

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- [2] F. Sunny, E. Taheri, M. Nikdast, S. Pasricha, "A Survey on Silicon Photonics for Deep Learning", *ACM Journal on Emerging Technologies in Computing Systems (JETC)*, Vol. 17, Iss. 4, Oct 2021.
- [3] A. Shafiee, S. Banerjee, K. Chakrabarty, S. Pasricha and M. Nikdast, "LoCI: An Analysis of the Impact of Optical Loss and Crosstalk Noise in Integrated Silicon-Photonic Neural Networks", *ACM GLSVLSI*, 2022.
- [4] F. Sunny, M. Nikdast, S. Pasricha, "Cross-Layer Design for AI Acceleration with Non-Coherent Optical Computing", *ACM GLSVLSI*, 2023.
- [5] F. Sunny, A. Mirza, M. Nikdast, S. Pasricha, "CrossLight: A Cross-Layer Optimized Silicon Photonic Neural Network Accelerator", *IEEE/ACM Design Automation Conference (DAC)*, 2021
- [6] F. Sunny, M. Nikdast and S. Pasricha, "RecLight: A Recurrent Neural Network Accelerator With Integrated Silicon Photonics", *IEEE Computer Society Annual Symposium on VLSI (ISVLSI)*, 2022.
- [7] S. Afifi, F. Sunny, M. Nikdast, S. Pasricha, "TRON: Transformer Neural Network Acceleration with Non-Coherent Silicon Photonics", *ACM GLSVLSI*, 2023.
- [8] F. Sunny, E. Taheri, M. Nikdast, S. Pasricha, "Machine Learning Accelerators in 2.5D Chiplet Platforms with Silicon Photonics", *IEEE/ACM DATE*, 2023.
- [9] F. Sunny, A. Mirza, M. Nikdast, S. Pasricha, "ROBIN: A Robust Optical Binary Neural Network Accelerator", *IEEE/ACM CASES (ESWEEK)*, 2021.
- [10] F. Sunny, M. Nikdast and S. Pasricha, "A Silicon Photonic Accelerator for Convolutional Neural Networks with Heterogeneous Quantization", *ACM GLSVLSI*, 2022.

Abstracts due: Aug. 21, 2023
Deadline (winter submission): Dec. 18, 2023
Abstracts due: Dec. 11, 2023
May , 2024
<http://www.hostsymposium.org>

ISSCC'24 – IEEE Int'l Solid-State Circuits Conference

San Francisco, CA
Deadline: Sept. 6, 2023
Feb. 18-22, 2024
<http://isscc.org>

DATE'24 - Design Automation and Test in Europe

Valencia, Spain
Deadline: Sept. 17, 2023
Abstracts due: Sept. 10, 2023
Mar. 25-27, 2024
<http://www.date-conference.com>

ISPD'24 – ACM Int'l Symposium on Physical Design

Taipei, Taiwan
Deadline: Sept. 30, 2023
Abstracts due: Sept. 24, 2023
Mar. 12-15, 2024
<http://www.ispd.cc>

ISQED'24 - Int'l Symposium on Quality Electronic Design

San Francisco, CA
Deadline: Sept. 29, 2023
Apr. 3-5, 2023
<http://www.isqed.org>

FPGA'24 – ACM/SIGDA Int'l Symposium on Field-Programmable Gate Arrays

Monterey, CA
Deadline: Oct. 13, 2023
Abstracts due: Oct. 6, 2023
Mar. 3 - 5, 2024
<http://www.isfpga.org>

ISCAS'24 – IEEE Int'l Symposium on Circuits and Systems

Singapore
Deadline: Oct. 15, 2023

SIGDA Awards

1. 60TH DAC BEST PAPER AWARDS FOR RESEARCH @ DAC 2023

<https://www.dac.com/About/Conference-Archive/60th-DAC-2023/Best-Paper-Recipients-2023>

Gamora: Graph Learning based Symbolic Reasoning for Large-Scale Boolean Networks

Nan Wu | UC Santa Barbara
Yingjie Li | University of Utah
Cong "Callie" Hao | Georgia Institute of Technology
Steve Dai | NVIDIA
Cunxi Yu | University of Utah
Yuan Xie | University of California, Santa Barbara

RL-CCD: Concurrent Clock and Data Optimization using Attention-Based Self-Supervised Reinforcement Learning

Yi-Chen Lu | Georgia Institute of Technology
Wei-Ting Chan | Synopsys Inc.
Deyuan Guo | Synopsys Inc.
Sudipto Kundu | Synopsys Inc.
Vishal Khandelwal | Synopsys Inc.
Sung Kyu Lim | Georgia Tech

2. ENGINEERING TRACK BEST PRESENTATION AWARD FOR FRONT-END DESIGN @ DAC 2023

<https://www.dac.com/About/Conference-Archive/60th-DAC-2023/Best-Paper-Recipients-2023>

Novel Numerical Hardware Design Methodology: From Machine Readable Specification to Optimized RTL

Theo Drane | Intel

3. ENGINEERING TRACK BEST PRESENTATION AWARD FOR BACK-END DESIGN @ DAC 2023

<https://www.dac.com/About/Conference-Archive/60th-DAC-2023/Best-Paper-Recipients-2023>

Predictive Crosstalk Fixing Using XGBoost Regressor

Fulung Li | Intel

May 19-22, 2024
<http://iscas2024.org>

RTAS'24 – 30th IEEE Real-Time and Embedded Technology and Applications Symposium

Hong Kong
Deadline: Oct. 31, 2023
May 13-16, 2024
<https://2024.rtas.org/>

Upcoming Conferences

ISLPED'23 – ACM/IEEE Int'l Symposium on Low Power Electronics and Design

Vienna, Austria
Aug. 7-8, 2023
<http://www.islped.org>

MLCAD'23 - ACM/IEEE Workshop on Machine Learning for CAD

Snowbird, Utah
Sep. 11-13, 2023
<https://mlcad-workshop.org/>

ESWEEK'23 - Embedded Systems Week

Hamburg, Germany
Sept. 17-22, 2023
<http://www.esweek.org>

NOCS'23 – IEEE/ACM Int'l Symposium on Networks-on-Chip (co-located with ESWEEK 2023)

Hamburg, Germany
Sept. 21-22, 2023
<https://nocs2023.github.io>

MEMOCODE'23 - IEEE/ACM Int'l Conference on Formal Methods

4. ENGINEERING TRACK BEST PRESENTATION AWARD FOR IP @ DAC 2023

<https://www.dac.com/About/Conference-Archive/60th-DAC-2023/Best-Paper-Recipients-2023>

Latency Processing Unit (LPU) for Acceleration of Hyperscale AI Models

Seungjae Moon | HyperAccel

5. ENGINEERING TRACK BEST PRESENTATION AWARD FOR EMBEDDED SYSTEMS & SOFTWARE @ DAC 2023

<https://www.dac.com/About/Conference-Archive/60th-DAC-2023/Best-Paper-Recipients-2023>

Early Android Software Verification With RISC-V Virtual Platforms

Lukas Juenger | MachineWare GmbH

6. 2023 PHIL KAUFMAN AWARD FOR DISTINGUISHED CONTRIBUTIONS TO ESD @ DAC 2023

<https://www.dac.com/About/Conference-Archive/60th-DAC-2023/Awards-2023>

Giovanni De Micheli | EPFL, Lausanne, Switzerland

7. IEEE ANDREW S. GROVE AWARD @ DAC 2023

<https://www.dac.com/About/Conference-Archive/60th-DAC-2023/Awards-2023>

H.S. Philip Wong | Stanford University, California, USA

8. IEEE DONALD O. PEDERSON SOLID-STATE CIRCUITS AWARD @ DAC 2023

<https://www.dac.com/About/Conference-Archive/60th-DAC-2023/Awards-2023>

Ingrid Verbauwhede | KI Leuven, Belgium

9. IEEE FELLOWS @ DAC 2023

<https://www.dac.com/About/Conference-Archive/60th-DAC-2023/Awards-2023>

- Sung Kyu Lim | Georgia Institute of Technology

and models for System Design (co-located with ESWEK 2023)

Hamburg, Germany

Sept. 21-22, 2023

<https://memocode2023.github.io>

VLSI-SoC'23 – IFIP/IEEE Int'l Conference on Very Large Scale Integration

Dubai, UAE

Oct. 16-18, 2023

<http://www.vlsi-soc.com>

BioCAS'23 – Biomedical Circuits and Systems Conference

Toronto, Canada

Oct. 19-21, 2023

<https://2023.ieee-biocas.org/>

PACT'23 - Int'l Conference on Parallel Architectures and Compilation Techniques

Vienna, Austria

Oct. 21-25, 2023

<http://www.pactconf.org>

MICRO'23 – IEEE/ACM Int'l Symposium on Microarchitecture

Toronto, Canada

Oct. 28 - Nov. 1, 2023

<http://www.microarch.org/micro56>

ICCAD'23 – IEEE/ACM Int'l Conference on Computer-Aided Design

San Francisco, CA

Oct 29 - Nov 2, 2023

<https://iccad.com/>

ICCD'23 – IEEE Int'l Conference on Computer Design

Washington DC, US

Nov. 6-8, 2023

<http://www.iccd-conf.com>

FPT'23 - Int'l Conference on Field-Programmable Technology

Yokohama, Japan

Dec. 11-14, 2023

<http://icfpt.org>

For contributions to electronic design automation and the tradeoff for 3-dimensional integrated circuits

- Sherief Reda | Brown University
For contributions to energy-efficient and approximate computing
- Zhiru Zhang | Cornell University
For contributions to field-programmable gate array high-level synthesis and accelerator design
- Norman Chang | Ansys, Inc
For leadership in the physical-level sign-off of Electronic Design Automation for SoC/ 3DIC
- Ryan Kastner | University of California-San Diego
For contributions to the design and security of reconfigurable systems
- Evangeline F. Y. Young | The Chinese University of Hong Kong
For contributions to electronic design automation in VLSI physical design

10. IEEE/ACM A. RICHARD NEWTON TECHNICAL IMPACT AWARD IN ELECTRONIC DESIGN AUTOMATION @ DAC 2023

<https://www.dac.com/About/Conference-Archive/60th-DAC-2023/Awards-2023>

Moshe Vardi and Pierre Wolper

“An Automata-Theoretic Approach to Automatic Program Verification”, published in the proceedings of the 1st Symposium on Logic in Computer Science, 1986.

11. ACM SIGDA PIONEERING ACHIEVEMENT AWARD @ DAC 2023

<https://www.dac.com/About/Conference-Archive/60th-DAC-2023/Awards-2023>

Ron Rohrer | Southern Methodist University, Carnegie Mellon University

12. ACM FELLOWS @ DAC 2023

<https://www.dac.com/About/Conference-Archive/60th-DAC-2023/Awards-2023>

- David Atienza | EPFL

HiPC'23 – IEEE Int'l Conference on High Performance Computing, Data, And Analytics

Goa, India

Dec. 18-21, 2023

<http://www.hipc.org>

iSES'23 – IEEE Int'l Symposium on Smart Electronic Systems

Ahmedabad, India

Dec. 18-20, 2023

<http://www.ieee-is-es.org>

For contributions to the design of high-performance integrated systems and ultra-low power edge circuits and architectures

- Jörg Henkel | Karlsruhe Institute of Technology
For contributions to hardware/software co-design of power and thermal efficient embedded computing
- Farinaz Koushanfar | UC San Diego
For contributions to secure computing and privacy-preserving machine learning

13. DAC UNDER-40 INNOVATORS AWARDS @ DAC 2023

<https://www.dac.com/About/Conference-Archive/60th-DAC-2023/Awards-2023>

- Jianli Chen | Shanghai LEDA Technology Co., Ltd.; Fudan University
- Pierre-Emmanuel Gaillardon | University of Utah
- Sriram Rajamanohar | Keysight
- Yiyu Shi | University of Notre Dame

14. DAC MARIE R. PISTILLI WOMEN IN ENGINEERING ACHIEVEMENT AWARD @ DAC 2023

<https://www.dac.com/About/Conference-Archive/60th-DAC-2023/Awards-2023>

X. Sharon Hu | University of Notre Dame

15. P.O. PISTILLI UNDERGRADUATE SCHOLARSHIP FOR ADVANCEMENT IN COMPUTER SCIENCE AND ELECTRICAL ENGINEERING @ DAC 2023

<https://www.dac.com/About/Conference-Archive/60th-DAC-2023/Awards-2023>

Shane Williams | Princeton University

16. DAC MOST INFLUENTIAL PAPER (MIP) AWARDS @ DAC 2023

<https://www.dac.com/About/Conference-Archive/60th-DAC-2023/Awards-2023>

- 1960s "Sketch pad a man-machine graphical communication system" by Ivan E. Sutherland, 1964.
- 1970s "A logic design structure for LSI testability" by E.B. Eichelberger, T.W. Williams, 14th DAC, 1977.
- 1980s "Dagon: technology binding and local optimization by DAG matching" by K. Keutzer, 24th DAC, 1987.

- 1990s "Symbolic Model Checking Using SAT Procedures Instead of BDDs" by A. Biere, A. Cimatti, E.M. Clarke, M. Fujita, Y. Zhu, 36th DAC, 1999.

17. ACM SIGDA DISTINGUISHED SERVICE AWARD @ DAC 2023

<https://www.dac.com/About/Conference-Archive/60th-DAC-2023/Awards-2023>

Tulika Mitra | National University of Singapore

18. ACM SIGDA DISTINGUISHED SERVICE AWARD @ DAC 2023

<https://www.dac.com/About/Conference-Archive/60th-DAC-2023/Awards-2023>

Patrick Groeneveld | Stanford University

19. ACM SIGDA OUTSTANDING NEW FACULTY AWARD @ DAC 2023

<https://www.dac.com/About/Conference-Archive/60th-DAC-2023/Awards-2023>

Tsung-Wei Huang | University of Utah

20. ACM SIGDA OUTSTANDING PH.D. DISSERTATION AWARD @ DAC 2023

<https://www.dac.com/About/Conference-Archive/60th-DAC-2023/Awards-2023>

Zhiyao Xie | Duke University

Advisors: Yiran Chen and Hai Li

21. ACM SIGDA MERITORIOUS SERVICE AWARD @ DAC 2023

<https://www.dac.com/About/Conference-Archive/60th-DAC-2023/Awards-2023>

- Robert Wille | Technical University of Munich
- Lei Jiang | Indiana University Bloomington
- Hui-Ru Jiang | National Taiwan University
- Jeyavijayan (JV) Rajendran | Texas A&M University

22. ACM TRANSACTIONS ON DESIGN AUTOMATION OF ELECTRONIC SYSTEMS BEST PAPER AWARD @ DAC 2023

<https://www.dac.com/About/Conference-Archive/60th-DAC-2023/Awards-2023>

Atefeh Sohrabizadeh, Cody (Hao) Yu, Min Gao, and Jason Cong

AutoDSE: Enabling Software Programmers to Design Efficient FPGA Accelerators. ACM Trans. Des. Autom. Electron. Syst. 27, 4, Article 32 (February 2022).

23. ACM TRANSACTIONS ON DESIGN AUTOMATION OF ELECTRONIC SYSTEMS ROOKIE AUTHOR OF THE YEAR (RAY) AWARD @ DAC 2023

<https://www.dac.com/About/Conference-Archive/60th-DAC-2023/Awards-2023>

Yue Tang | University of Pittsburgh

EF-Train: Enable Efficient On-device CNN Training on FPGA through Data Reshaping for Online Adaptation or Personalization. ACM Trans. Des. Autom. Electron. Syst. 27, 5, Article 49 (June 2022) | Additional authors: Xinyi Zhang, Peipei Zhou, and Jingtong Hu

24. BEST PAPER AWARD FOR ACM TRANSACTIONS ON RECONFIGURABLE TECHNOLOGY AND SYSTEMS @ DAC 2023

<https://www.dac.com/About/Conference-Archive/60th-DAC-2023/Awards-2023>

Niansong Zhang, Xiang Chen, and Nachiket Kapre

“RapidLayout: Fast Hard Block Placement of FPGA-optimized Systolic Arrays Using Evolutionary Algorithm,” ACM Transactions on Reconfigurable Technology and Systems, Volume 15, Issue 4, June 2022, Article No.: 38, pp 1–23.

25. IEEE TRANSACTIONS ON COMPUTER-AIDED DESIGN OF INTEGRATED CIRCUITS AND SYSTEMS DONALD O. PEDERSON BEST PAPER AWARD @ DAC 2023

<https://www.dac.com/About/Conference-Archive/60th-DAC-2023/Awards-2023>

Xiaochen Peng, Shanshi Huang, Hongwu Jiang, Anni Lu, and Shimeng Yu

DNN+NeuroSim V2.0: An End-to-End Benchmarking Framework for Compute-in-Memory Accelerators for On-Chip Training

26. 2023 DAC POSTER GLADIATOR @ DAC 2023

<https://www.dac.com/About/Conference-Archive/60th-DAC-2023/Awards-2023>

Marco Meuli | STMicrosystems

**Requirement Tracing for Design Flow in Communication
Protocols IP**

Who's Who



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Personal webpage:

<https://sme.fudan.edu.cn/5f/c6/c31141a352198/page.htm>

Technical Activities

1. [RISC-V Fast-Forwards, Breaks Ground for Auto Innovations](#)

The SiFive RISC-V Automotive CPU IP continues to advance to address and enable automotive applications like infotainment, connectivity and advanced driver-assistance systems. Yet without the right tools, embedded software developers at OEMs and suppliers cannot make full use of the energy efficiency, simplicity, security and flexibility that RISC-V offers...

2. [Renesas R-Car S4 Starter Kit Speeds Software Development for Automotive Gateway Systems](#)

Renesas Electronics Corp.'s R-Car S4 Starter Kit is a low-cost, readily available development board for automotive gateway systems. The R-Car S4 Starter Kit uses the Renesas R-Car S4 system on chip (SoC), which delivers high computing performance and an array of communication features for both cloud communication and safe vehicle control...

3. [Siemens Enhances IC Layout Optimization](#)

Siemens Digital Industries Software's Calibre DesignEnhancer software is an innovative solution that enables integrated circuit (IC), place-and-route (P&R) and full-custom design teams to dramatically improve productivity, boost design quality and reduce time to market by automatically implementing 'Calibre correct-by-construction' design layout modifications much earlier in the IC design and verification process...

Job Positions

1. Johns Hopkins University, US

Job Title: Researcher in Computer Science

Description: This position is part of the National Institute of Standards (NIST) Professional Research Experience (PREP) program. NIST recognizes that its research staff may wish to collaborate with researchers at academic institutions on specific projects of mutual interest, thus requiring that such institutions must be the recipient of a PREP award. The PREP program requires staff from a wide range of backgrounds to work on scientific research in many areas. Employees in this position will perform

technical work that underpins the scientific research of the collaboration. The Quantum Communications and Networks Project is implementing a quantum network testbed in which the suitability and performance of new and existing quantum devices and systems can be studied in a real life network environment. The testbed will lead to the development of best-practices and protocols for quantum networks. As a part of this effort, project members are working towards a demonstration of entanglement swapping where photons participating in joint measurements (Bell state measurements) populate non-overlapping, spectrally distinct modes. For more information, please refer to <https://apply.interfolio.com/126156>.

2. University of Nottingham Ningbo, China

Job Title: Assistant/Associate Professor in Computer Science

Description: The successful candidate will be expected to lead and deliver lectures and seminars in the topics within the School of Computer Science. We are looking for a world class research leader to strengthen our team of international experts, specializing in at least one of the following areas: Cybersecurity, Intelligent Computing, Software Engineering, Computer Graphics/Virtual Reality, Natural Language Processing. Candidates must have a PhD in computer science or closely related disciplines, together with an international reputation in research and scholarship. An established track record in high quality research output and the ability to attract external research funding is a distinct advantage. Teaching and tutorial experience in computer science subjects at undergraduate and postgraduate level in an international English-speaking institution is also essential. For more information, please refer to <https://facultyvacancies.com/assistantassociate-professor-in-computer-science,i35481.html>.

3. University of Oulu, Finland

Job Title: Doctoral Researcher in Electrical Engineering

Description: Antenna research is conducted in the RF group in the CWC-RT research unit. The group and unit contribute to the national Finnish 6G Flagship and other European and national projects in the field, including, among others, the HEU TERRAMETA consortium and the national RF Sampo project. Besides that, antenna research in the group is also sponsored by the US Office of Naval Research Global (ONRG) and the Academy of Finland (LIBERATE project). As a Doctoral researcher, you will: perform high-quality research work within a multidisciplinary research team; attend doctoral courses; publish research results in the most esteemed international fora; complete your doctoral thesis within four years. Please apply by Sunday, August 6th, 2023. For more information, please refer to

<https://facultyvacancies.com/researcher-in-electrical-engineering,i35641.html>.

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