

ASAP 2021

Application-specific Systems, Architectures and Processors

Call for Papers

**Green AI for
Ubiquitous Computing**

**Diversity and Inclusion
in VLSI**



**Heterogeneous
Integration**

Important Dates

Abstract submission deadline: April 5, 2021
Paper submission deadline: April 12, 2021
Notification of acceptance: June 2, 2021
Camera-ready papers: June 21, 2021
Video presentations: June 21, 2021

The 32nd IEEE International Conference on **Application specific Systems, Architectures and Processors** will go virtual in 2021. The history of the ASAP conference traces back to the International Workshop on Systolic Arrays, organized in 1986 in Oxford, UK. It later developed into the International Conference on Application-Specific Array Processors. With its current title, it was organized for the first time in Chicago, USA, in 1996. Since then, it has alternated between Europe and North-America. The conference covers the theory and practice of application-specific systems, architectures, and processors. For the 2021 edition of ASAP, manuscripts in the following categories are especially welcome:

- **Green AI for Ubiquitous Computing**
- **Diversity and Inclusion in VLSI**
- **Heterogeneous Integration**

Further, the conference will build upon traditional strengths in areas such as:

- Computer arithmetic
- Cryptography
- Compression
- Network processing
- Signal and image processing
- Reconfigurable computing (FPGAs, CGRAs, etc.)
- Application-specific instruction-set processors
- Hardware and reconfigurable accelerators
- Embedded systems and domain-specific solutions
- Approximate computing
- Heterogeneous computing, ranging from embedded to HPC systems and data centers
- Cloud computing infrastructures and acceleration
- Edge computing, wireless, mobile, and IoT systems
- Hardware and software architectures for CPS
- AI architectures, acceleration of machine learning (custom designs or based on FPGAs, GPUs, TPUs)
- Autonomous computing systems
- Design methods, tools, and compilers
- Simulation and prototyping (e.g., validation, performance analysis)
- System quality attributes (energy efficiency, fault tolerance, security, etc.)
- Accelerators for computational genomics, finance, big data, and other complex workloads
- Emerging technologies (e.g., quantum computing, optical computing or communication, 3D devices and interconnects, memristors for storage and logic, in-memory computing)

Authors are invited to submit original, unpublished research manuscripts on the above topics. Submissions must be done through EasyChair (<https://easychair.org/conferences/?conf=asap2021>). All papers will be reviewed by at least three members of the program committee, with a double-blind review process. Manuscripts for full papers should not exceed 8 single-spaced, double-column pages using 10-point size font on 8.5x11 inch pages (IEEE conference style), including references, figures, and tables. Manuscript for short papers should not exceed 4 single-spaced, double-column pages. All papers must be submitted electronically in PDF format. All accepted papers must be presented by one of the authors in order to be included in the proceedings and published in the IEEE Xplore Digital Library. Selected papers will be invited to submit an extended version for a **Special Issue** in Springer's Journal of Signal Processing Systems.

Organizing Committee

General Chair

- Deming Chen, *University of Illinois at Urbana-Champaign, USA*

Program Co-Chairs

- Mondira Pant, *Intel, USA*
- Yingyan (Celine) Lin, *Rice University, USA*

Finance Chair

- Bo Yuan, *Rutgers University, USA*

Publicity Co-Chairs

- Siddharth Garg, *New York University, USA*
- Theocharis Theocharides, *University of Cyprus, Cyprus*

Web & Registration Chair

- Caiwen Ding, *University of Connecticut, USA*

Proceedings Chair

- Fan Chen, *Indiana University Bloomington, USA*

Special Session Chair

- Zhenman Fang, *Simon Fraser University, Canada*

Technical Program Committee

- Lars Bauer, *Karlsruhe Institute of Technology, Germany*
- Benjamin Carrion Schaefer, *University of Texas at Dallas, USA*
- Anupam Chattopadhyay, *NTU, Singapore*
- Thomas Chau, *Samsung AI Centre, UK*
- Xiang Chen, *George Mason University, USA*
- Zhe Chen, *University of California, Los Angeles, USA*
- Ray Cheung, *City University of Hong Kong, Hong Kong*
- Lei Deng, *Tsinghua University, China*
- Steven Derrien, *University of Rennes, France*
- Somdip Dey, *University of Essex, UK*
- Tong Geng, *Boston University, USA*
- Diana Göhringer, *TU Dresden, Germany*
- Xinfei Guo, *Mellanox Technologies, USA*
- Frank Hannig, *Friedrich-Alexander University Erlangen-Nürnberg, Germany*
- Cong Hao, *Georgia Institute of Technology, USA*
- Martin Herbordt, *Boston University, USA*
- H. Peter Hofstee, *IBM Austin, USA*
- Jiayi Huang, *UC Santa Barbara, USA*
- Ravi Lyer, *Intel, USA*
- Hongyang Jia, *Princeton University, USA*
- Weiwen Jiang, *University of Notre Dame, USA*
- Sang-Woo Jun, *University of California, Irvine, USA*
- Dirk Koch, *The University of Manchester, UK*
- Herman Lam, *University of Florida, USA*
- Byeong Kil Lee, *University of Colorado, USA*
- Jingwen Leng, *Shanghai Jiao Tong University, China*
- Bing Li, *Capital Normal University, China*
- Meng Li, *Facebook Inc, USA*
- Mengquan Li, *Rice University, USA*
- Siyu Liao, *Rutgers University, USA*
- Xue (Shelley) Lin, *NorthEastern University, USA*
- Weifeng Liu, *China University of Petroleum, China*
- Iakovos Mavroidis, *Foundation for Research and Technology, Greece*
- Roger Moussalli, *Two Sigma, USA*
- Chen Pan, *Texas A&M University-Corpus Christi, USA*
- Edwin Park, *Qualcomm, USA*
- Viktor K. Prasanna, *University of Southern California, USA*
- Ao Ren, *Chongqing University, China*
- Tanguy Risset, *INSA Lyon, France*
- Hayden Kwok-Hay So, *University of Hong Kong, Hong Kong*
- Linghao Song, *University of California, Los Angeles, USA*
- Jürgen Teich, *FAU, Germany*
- Rujia Wang, *Illinois Institute of Technology, USA*
- Wujie Wen, *Lehigh University, USA*
- Mimi Xie, *UTSA, USA*
- Xiaolin Xu, *Northeastern University, USA*
- Fan Yang, *Fudan University, China*
- Lei Yang, *University of New Mexico, USA*
- Wei Zhang, *The Hong Kong University of Science and Technology, Hong Kong*