

ARITH-2020

27th IEEE International Symposium on Computer Arithmetic
Portland, Oregon, USA. June 7-10, 2020

Important Dates

Initial paper submissions:
January 22nd, 2020
(must include title, authors,
keywords, abstract)
extended deadline

Final submission with
complete paper:
February 7th, 2020
extended deadline

Paper notification Early:
April, 2020

Paper camera-ready End:
April, 2020

Conference:
June 7-10th, 2020

Organization

General chair:
Marius Cornea,
Intel Corporation, USA

Program co-chairs:
Weiqiang Liu,
*Nanjing University of
Aeronautics and
Astronautics (NUAA), China*

Arnaud Tisserand, *CNRS,
France*

Financial chair:
Robin C. Gilbert, *Intel
Corporation, USA*

Web chair:
Alberto Cannavò,
Politecnico di Torino, Italy

Scope

Since 1969, the ARITH symposia have served as the flagship conference for presenting scientific work on the latest research in computer arithmetic. Computer arithmetic is now driving the most important innovations and product directions in our industry, such as artificial intelligence and security.

Authors are invited to submit papers describing recent advances on all aspects related to computer arithmetic, its applications or implementations. This includes, but is not restricted to, the following topics:

- Foundations of number systems and arithmetic
- Arithmetic processor design and implementation
- Arithmetic algorithms and their analysis
- Floating-point units, algorithms, and numerical analysis
- Elementary and special function implementations
- Test, validation, and formal verification techniques for arithmetic implementations
- Power-efficient or low-energy arithmetic units and processors
- Industrial implementation of arithmetic units and processors
- Fault/error-tolerance in arithmetic implementations
- Arithmetic for FPGAs and reconfigurable logic
- Design automation for computer arithmetic implementations
- Arithmetic, datapath design and numerics for artificial intelligence, machine/deep learning
- Computer arithmetic for approximate computing
- Computer arithmetic for security and cryptography
- Arithmetic to enhance accuracy or reliability (multiple-precision, interval arithmetic, ...)
- Arithmetic challenges in HPC and exascale computing (accuracy, reproducibility, ...)
- Arithmetic for specific application domains (big-data analytics, signal processing, computer graphics, multimedia, computer vision, finance, ...)
- Computer arithmetic in emerging technologies
- Non-conventional computer arithmetic and applications

Specific Sessions

Besides inviting submissions for regular sessions (8 pages maximum papers), ARITH-2020 will also propose specific sessions. All accepted submissions, whether regular full papers, specific topics, short or industry papers or student forum presentations, will have a presentation slot scheduled.

Short and Industry Papers

For ARITH-2020, we are also inviting short papers (4 pages maximum) to describe industry applications, work-in-progress ideas, or interim results.

Specific Topic Sessions

We are also inviting people to co-organize a few sessions on specific topics. Please identify the targeted session for submissions (e.g. use the anonymous author field). Submissions (4-page and 8-page) must comply to the procedure below and will be reviewed as all other types of sessions.

Co-organizers have to contact the PC Chairs before Dec. 30th, 2019 to propose a topic.

Student Forum

We invite students at any level to present their work in an informal session without papers in the proceedings.

Procedure for submission for all sessions

An abstract submission deadline has been set to January 8th. This initial submission must include title, author(s) (only on the EasyChair website, not in the anonymous PDF file), keywords and abstract. The full paper is due on January 22nd.

Submission site:

<https://easychair.org/conferences/?conf=arith2020>

Papers under review elsewhere are not acceptable for submission to ARITH-2020. A double-blind peer review policy will be enforced. Please, remove authors' names, acknowledgments or any obvious references to the authors before submission of the PDF file. By submitting a paper you implicitly confirm you are solely submitting it to ARITH-2020. The final submissions of accepted regular session papers cannot exceed 8 pages (NO extra pages) using the IEEE Computer Society Conference format (two columns). However, for review, authors may submit a paper with a maximum of 20 pages, 12pt font size, single column and double spacing. The final submissions for short and industry papers cannot exceed 4 pages (NO extra pages) using the IEEE Computer Society Conference format (two columns). For review, the paper may have up to 10 pages, in 12pt font size, single column and double spacing.

Formatting instructions:

http://www.ieee.org/conferences_events/conferences/publishing/templates.html

Possible journal extensions:

We expect to propose a special section to the IEEE Transactions on Computers for extensions of papers presented at ARITH-2020 (a dedicated CFP will be made if the special issue is accepted).