34th IEEE International Symposium on Computer Arithmetic

June 27–30, 2027, Nanjing, China (On-site)

CALL FOR PAPERS

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Computer arithmetic has always been at the core of the digital age, and is currently driving innovation in domains such as artificial intelligence, high-performance computing, signal processing, and security. Since 1969, **The IEEE International Symposium on Computer Arithmetic (ARITH)** has been the flagship conference for computer arithmetic. ARITH 2027 welcomes submissions of papers describing recent scientific advances related to computer arithmetic. All accepted papers will be presented at the conference and included in the conference proceedings and in the IEEE Xplore Digital Library.

Topics of interest include, but are not restricted to:

// Arithmetic foundations, systems and formats

- Arithmetic theory of computer systems
- Number representation of integers, real and complex numbers, finite-fields, etc.
- Analysis of number systems such as fixed/floating point, intervals, posits, etc.
- Novel arithmetic systems and application-specific number formats
- Standardization (e.g., IEEE P3109, IEEE 754-2029)

// Implementation of computer arithmetic

- Novel architecture of arithmetic units on various technologies including traditional, FPGA, optical, analog, quantum, etc.
- High-performance, low-power and fault-tolerant designs and implementations
- Design tools and methodologies, including testing and formal verification

// Algorithms and numerics

- Computer approximations of elementary and special functions
- Arithmetic algorithms and their analysis (e.g., mixed precision, error analysis, etc.)
- Design, compilation, optimization, validation, and verification of numerical software

// Application-specific arithmetic

- Artificial intelligence, machine learning and deep learning
- Cryptography and security
- Signal processing, multimedia, and computer graphics

All topics that relate to intensive use of computer arithmetic are welcome as well.

Important Information for Submissions

Submissions must be in English and should be at most 8 pages for full papers, or 4 pages for short industry papers in the IEEE CS Conference format (including references). Submissions will be subject to double-blind review. Papers under review elsewhere are not acceptable for submission to ARITH 2027. By submitting a paper, authors implicitly confirm that they are solely submitting it to ARITH 2027.

Authors must comply with the guidelines on the use and disclosure of content generated by artificial intelligence (AI) specified by IEEE:
https://open.ieee.org/author-guidelines-for-artificial-intelligence-ai-generated-text/

The review process for ARITH 2027 is double-blind. Author names, affiliations, and grants must be anonymized in submitted papers, and self-references should be handled as third-party references. Papers not complying with this policy will be administratively rejected. While non-anonymous preprints or code repositories are not considered a violation of this policy, reviewers are discouraged from seeking them out. Authors should provide anonymized versions of any related artifacts where applicable.

Important Dates

Abstract Submission Deadline	**January 16, 2027, 23:59:59 CST**
Paper Submission Deadline	**January 23, 2027, 23:59:59 CST**
Reviews Completed and Authors Notified	**April 9, 2027, 23:59:59 CST**

Participants of all levels: ARITH is the premier conference for computer arithmetic. We urge you to submit a paper and/or attend the conference if you are interested in this subject. See you at the conference!

ARITH 2027

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