Call for Papers

https://clustercomp.org/2021/papers/

Clusters remain the primary system architecture for building many of today's rapidly evolving computing infrastructures and are used to solve some of the most complex problems. The challenges to make them scalable, efficient, productive, and increasingly effective requires a community effort in the areas of cluster system design, advancing the capabilities of the software stack, system management and monitoring, and the design of algorithms, methods, and applications to leverage the overall infrastructure.

Following the successes of previous IEEE Cluster conferences, for IEEE Cluster 2021, which will be held September 7 - 10, 2021 in Portland, OR, we again solicit high-quality original work that advances the state-of-the-art in clusters and closely related fields. All papers will be rigorously peer-reviewed for their originality, technical depth and correctness, potential impact, relevance to the conference, and quality of presentation. Research papers must clearly demonstrate novel research contributions while papers reporting experiences must clearly describe the lessons learned and the resulting impact, along with the utility of the approach in comparison to previous work.

Papers of interest to IEEE Cluster 2021 will fall into four topic areas:

Area 1: Application, Algorithms, and Libraries

- Node and system architecture for HPC and Big Data clusters
- Architecture for converged HPC/Big Data clusters
- Energy-efficient cluster architectures
- Packaging, power and cooling
- Hybrid programming techniques in applications and libraries (e.g., MPI+X)
- Cluster benchmarks
- Application-level libraries on clusters
- Effective use of clusters in novel applications
- Performance evaluation tools

Area 2: Architecture, Network/Communications, and Management

- HPC and Big Data application studies on large-scale clusters
- Applications at the boundary of HPC and Big Data
- New applications for converged HPC/Big Data clusters
- Application-level performance and energy modeling and measurement
- Novel algorithms on clusters
- Accelerators, reconfigurable and domain-specific hardware
- Heterogeneous clusters
- Interconnect/memory architectures
- Single system/distributed image clusters
- Administration, monitoring and maintenance tools

Area 3: Programming and System Software

- Cluster system software/operating systems
- Programming models for converged HPC/Big Data/Machine Learning systems
- System software supporting the convergence of HPC, Big Data, and Machine Learning processing
- Cloud-enabling cluster technologies and virtualization
- Energy-efficient middleware
- Cluster system-level protocols and APIs
- Cluster security
- Resource and job management
- Programming and software development environments on clusters
- Fault tolerance and high-availability

Area 4: Data, Storage, and Visualization

- Cluster architectures for Big Data storage and processing
- Middleware for Big Data management
- Cluster-based cloud architectures for Big Data
- Storage systems supporting the convergence of HPC and Big Data processing
- File systems and I/O libraries
- Support and integration of non-volatile memory
- Visualization clusters and tiled displays
- Big Data visualization tools
- Programming models for Big Data processing
- Big Data application studies on cluster architectures

Paper Submission

Authors must indicate the primary topic area of their submissions from the four topic areas provided above. In addition, they may optionally rank their paper relative to the overall set of topics. The papers may be submitted as either a full 10-page paper or as a shorter 4-page paper submission. Please note that references are not counted in the limits on the number of pages and a 10-page submission may be accepted with a caveat of transforming it into a 4-page version for presentation at the conference. Submissions must be in PDF format and must conform to the following Xplore layout, page limit, and font size.

- Submissions are required to be no more than 10 pages (excluding references).
- Submissions must be single-spaced, 2-column numbered pages in IEEE Xplore format (8.5x11-inch paper, margins in inches – top: 0.75, bottom: 1.0, sides:0.625, and between columns:0.25, main text: 10pt).
- Papers will NOT be reviewed double-blind. Author names and affiliations should be included in the submitted paper, and appropriate citations of prior work must be included.
- LaTeX and Word Templates are available **here.**
- Only web-based submissions are allowed.
- Please submit your paper via **the online submission system**.

Important Dates

- Submission site open: March 1, 2021
- Abstract deadline: May 10, 2021
- Full Papers due: May 17, 2021
- Paper Acceptance Notification: July 5, 2021
- Camera-ready deadline: July 30, 2021
- Conference: September 7 - 10, 2020
- All deadlines are **Anywhere on Earth (AoE)**