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Conference info

2022 BenchCouncil International Symposium on benchmarking, measuring and optimizing (Bench 2022) call for papers

1. Introduction

Benchmarks, Data, Standards, Measurements, and Optimizations are fundamentally human activities and assets. The Bench conference has two essential duties: promote data or benchmark-based quantitative approaches to tackle multidisciplinary and interdisciplinary challenges; connect architecture, system, data management, algorithm, and application communities for better software and hardware co-design.

The Bench conference provides a high-quality, single-track forum for presenting results and discussing ideas that further the knowledge and understanding of the benchmarks, data, standards, measurements, and optimizations community. It is a multidisciplinary and interdisciplinary conference that includes invited and contributed sessions. The past meetings attracted researchers and practitioners from related communities.

Regularly, the Bench conference will present the BenchCouncil Achievement Award ($3000), the BenchCouncil Rising Star Award ($1000), the BenchCouncil Best Paper Award ($1000), and the BenchCouncil Distinguished Doctoral Dissertation Awards in Computer Architecture ($1000) and other areas ($1000). This year, the BenchCouncil Distinguished Doctoral Dissertation Award includes two tracks: computer architecture and other areas. Among the submissions of each track, four candidates will be selected as finalists. They will be invited to give a 30-minute presentation at the Bench 2022 Conference and contribute research articles to BenchCouncil Transactions on Benchmarks, Standards and Evaluations. Finally, for each track, one among the four will receive the award for each track, which carries a $1,000 honorarium.

2. Call for papers

The Bench conference encompasses a wide range of areas and topics in benchmarking, measurement, evaluation methods, and tools. We solicit papers describing original and previously unpublished work. The areas and topics of interest include, but are not limited to the following:
Areas:

* **Architecture**: The benchmarking of the architecture and the hardware, e.g., the benchmark suite for CPU, GPU, Memory, HPC.
* **Data Management**: The evaluation of the data management and storage, e.g., the benchmark specifications and tools for databases.
* **Algorithm**: The evaluation of the algorithm, e.g., the evaluation rules and datasets in machine learning, deep learning, reinforce learning.
* **Datasets**: Evaluation of data quality, algorithms for optimizing data, and datasets used for research and benchmarking.
* **System**: The testing of the software system, e.g., the testing of operating system, distributed system, web server.
* **Network**: The measurement of communication network, e.g., the measurement of network in data center, wireless, mobile, ad-hoc, and sensor networks.
* **Reliability and Security**: The measurement of reliability and security.
* **Application**: The measurement of application in medical, finance, education, etc.

Topics:

* **Benchmark and standard specifications, implementations, and validations**: Big Data, Artificial intelligence (AI), High performance computing (HPC), Machine learning, Warehouse-scale computing, Mobile robotics, Edge and fog computing, Internet of Things (IoT), Blockchain, Data management and storage, Financial, Education, Medical or other application domains.
* **Dataset Generation and Analysis**: Research or industry data sets, including the methods used to collect the data and technical analyses supporting the quality of the measurements; Analyses or meta-analyses of existing data and original articles on systems, technologies and techniques that advance data sharing and reuse to support reproducible research; Evaluations of the rigor and quality of the experiments used to generate data and the completeness of the descriptions of the data; Tools generating large-scale data.
* **Workload characterization, quantitative measurement, design and evaluation studies**: Characterization and evaluation of Computer and communication networks, protocols, and algorithms; Wireless, mobile, ad-hoc, and sensor networks, IoT applications; Computer architectures, hardware accelerators, multicore processors, memory systems and storage networks; HPC systems; Operating systems, file systems, and databases; Virtualization, data centers, distributed and cloud computing, fog and edge computing; Mobile and personal computing systems; Energy-efficient computing systems; Real-time and fault-tolerant systems; Security and privacy of computing and networked systems; Software systems and services, and enterprise applications; Social networks, multimedia systems, web services; Cyber-physical systems.
* **Methodologies, abstractions, metrics, algorithms, and tools**: Analytical modeling techniques and model validation; Workload characterization and benchmarking; Performance, scalability, power, and reliability analysis; Sustainability analysis and

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power management; System measurement, performance monitoring, and forecasting; Anomaly detection, problem diagnosis, and troubleshooting; Capacity planning, resource allocation, runtime management, and scheduling; Experimental design, statistical analysis, and simulation.

* **Measurement and evaluation**: Evaluation methodologies and metrics; Testbed methodologies and systems; Instrumentation, sampling, tracing, and profiling of large-scale, real-world applications and systems; Collection and analysis of measurement data that yield new insights; Measurement-based modeling (e.g., workloads, scaling behavior, assessment of performance bottlenecks); Methods and tools to monitor and visualize measurement and evaluation data; Systems and algorithms that build on measurement-based findings; Advances in data collection, analysis, and storage (e.g., anonymization, querying, sharing); Reappraisal of previous empirical measurements and measurement-based conclusions; Descriptions of challenges and future directions that the measurement and evaluation community should pursue.

3. Paper submission

Papers must be submitted in PDF. For a full paper, the page limit is 15 pages in the LNCS format, not including references. For a short paper, the page limit is 8 pages in the LNCS format, not including references. The submissions will be judged based on the merit of the ideas rather than the length. After the conference, the proceeding will be published by Springer LNCS (Indexed by EI). Please note that the LNCS format (LaTexTemplate) is the final one for publishing.

At least one author must pre-register for the symposium, and at least one author must attend the symposium to present the paper. Papers for which no author is pre-registered will be removed from the proceedings.

Please make sure your submission satisfies ALL of the following requirements:

* Paper must be submitted in printable PDF format.
* Please number the pages of your submission.
* The submission must be formatted for black-and-white printers. Please make sure your figures are readable when printed in black and white.
* The submission must describe unpublished work that is not currently under review at any other conference or journal venues.

Submission site: https://bench2022.hotcrp.com/
LaTex Template: https://www.benchcouncil.org/file/llncs2e.zip

4. Awards

Every year BenchCouncil presents the following awards at the Bench Conference. The details about the award selection rules are illustrated in [1].

* **BenchCouncil Achievement Award ($3,000)**
  This award recognizes a senior member who has made long-term contributions to benchmarking, measuring, and optimizing. The winner is eligible for the status of a BenchCouncil Fellow.
* **BenchCouncil Rising Star Award ($1,000)**
  This award recognizes a junior member who demonstrates outstanding potential for research and practice in benchmarking, measuring, and optimizing.
* **BenchCouncil Best Paper Award ($1,000)**
  This award recognizes a paper presented at the Bench conferences demonstrating potential impact on research and practice in benchmarking, measuring, and optimizing.
* **BenchCouncil Distinguished Doctoral Dissertation Award ($2000)**
  This award recognizes and encourages superior research and writing by doctoral candidates in the broad field of benchmarks, data, standards, evaluations, and optimizations community. This year, the award includes two tracks: the BenchCouncil Distinguished Doctoral Dissertation Award in Computer Architecture ($1000) and BenchCouncil Distinguished Doctoral Dissertation Award in other areas ($1000).

5. Past bench symposia and proceedings

The Bench conference has been successfully held for four series, from 2018 to 2021. Their websites and proceedings are as follows.

* **Bench 2021 Symposium**
  Website: https://www.benchcouncil.org/bench2021/
  Proceeding [2]: https://www.sciencedirect.com/journal/benchcouncil-transactions-on-benchmarks-standards-and-evaluations/vol/1/issue/1
* **Bench 2020 Symposium**
  Website: https://www.benchcouncil.org/bench2020/
  Proceeding [3]: https://link.springer.com/book/10.1007/978-3-030-71058-3
* **Bench 2019 Symposium**
  Website: https://www.benchcouncil.org/bench2019/
  Proceeding [4]: https://link.springer.com/book/10.1007/978-3-030-49556-5
* **Bench 2018 Symposium**
  Website: https://www.benchcouncil.org/bench2018/
  Proceeding [5]: https://link.springer.com/book/10.1007/978-3-030-32813-9

6. Review rules

To reflect fairness, we will treat each article under the same rules. This set of review ethics is derived and based on the MICRO 2020 [6], ASPLOS 2020–2021 [7,8], ISCA 2020–2021 [9,10] review guidelines, and the details are as follows:

1. The online discussion is blind. While the reviewers discuss the papers, they do not know others' identities beyond reviewer #A, #B. Hence, a single reviewer cannot easily assert seniority and silence other voices or influence them beyond the strength of their arguments.
2. When the reviewers point out closeness to prior work that informs the reviewer's decision to lower the novelty and contribution of a paper, they should provide a full citation to that prior work.
3. When the reviewers asking authors to draw a comparison with concurrent work (e.g., work that was published or appeared online *after* the paper submission deadline) or with preliminary work (e.g., a poster or abstract that is not archival), this comparison should not inform a lower score by the reviewer.
4. Provide useful and constructive feedback to the authors. Be respectful, professional, and positive in your reviews and provide suggestions for the authors to improve their work.
5. Score the paper absolutely and relative to the group of papers you are reviewing.
   Absolute overall merit — There are four grades you can give to each paper for absolute overall merit; the top 2 ratings mean that you think the paper is acceptable to the conference and the bottom 2 ratings mean that in your opinion the paper is below the threshold for the conference. Please assign these values thinking, whether the paper is above the threshold for the conference or below.

Relative overall merit — is based on the papers that you are reviewing. You can rank your papers and then group the papers into the four bins. Except for fractional errors, you should be dividing your papers equally into the four categories.

6. Reviewers must treat all submissions as strictly confidential and destroy all papers once the technical program has been finalized.
7. Reviewers must contact the PC chair or EIC if they feel there is an ethical violation of any sort (e.g., authors seeking support for a paper, authors seeking to identify who the reviewers are).
8. Do not actively look for author identities. Reviewers should judge a paper solely on its merits.
9. If you know the authors, do not publicize the authors. If you would like to recuse yourself from the review task, contact the PC Chair.
10. Reviewers should review the current submission. If you have reviewed a previous submission, make sure your review is based on the current submission.
11. Reviewers must not share the papers with students/colleagues.
12. Reviewers must compose the reviews themselves and provide unbiased reviews.
13. Do not solicit external reviews without consulting the PC chairs or EIC. If you regularly involve your students in the review process as part of their Ph.D. training, contact the PC chairs. You are still responsible for the reviews. You may do this on no more than one of your reviews.
14. Reviewers must keep review discussions (including which papers you reviewed) confidential.
15. Do not discuss the content of a submitted paper/reviews with anyone other than officially on the submission management system like HotCRP or EasyChair during the online discussion period or the PC meeting (from now until paper publication in any venue).
16. Do not reveal the name of paper authors in case reviewers happen to be aware of author identity. (Author names of accepted papers will be revealed after the PC meeting; author names of rejected papers will never be revealed.)
17. Do not disclose the outcome of a paper until its authors are notified of its acceptance or rejection.
18. Do not download or acquire material from the review site that you do not need access to.
19. Do not disclose the content of reviews, including the reviewers' identities or discussions about a paper.

7. Committees

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Award Committee

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