



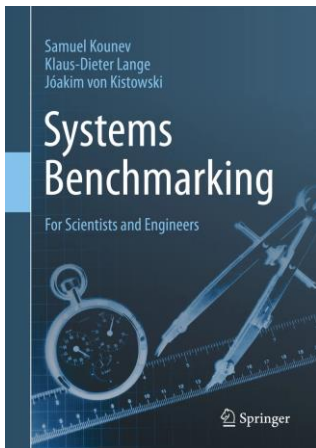
The Vision of OpenBehch

Wei Wang

ECNU / X-lab / ONES Group

2022-11

Why Benchmark ?



TOP500

From Wikipedia, the free encyclopedia

The **TOP500** project ranks and details the 500 most powerful non-distributed computer systems in the world. The project was started in 1993 and publishes an updated list of the supercomputers twice a year. The first of these updates always coincides with the International Supercomputing Conference in June, and the second is presented at the ACM/IEEE Supercomputing Conference in November. The project aims to provide a reliable basis for tracking and detecting trends in high-performance computing and bases rankings on HPL^[1] a portable implementation of the high-performance **LINPACK** **benchmark** written in Fortran for distributed-memory computers.

Currently the latest TOP500 list is the 59th, published in June 2022. Since June 2022, USA's Frontier is the world's most powerful supercomputer, reaching 1102 petaFlops (1.102 exaFlops) on the LINPACK benchmarks.^[2] The United States has by far the highest share of total computing power on the list (nearly 50%),^[3] while China currently leads the list in number of systems with 173 supercomputers, with the USA not far behind in second place.

The TOP500 list is compiled by Jack Dongarra of the University of Tennessee, Knoxville, Erich Strohmaier and Horst Simon of the National Energy Research Scientific Computing Center (NERSC) and Lawrence Berkeley National Laboratory (LBNL), and, until his death in 2014, Hans Meuer of the University of Mannheim, Germany.

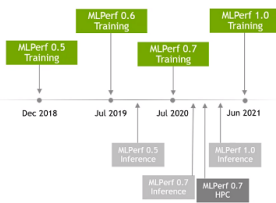
The TOP500 project lists also **Green500** and **HPCG benchmark list**.



Jack Dongarra



INDUSTRY STANDARD BENCHMARK SUITE FOR AI PERFORMANCE



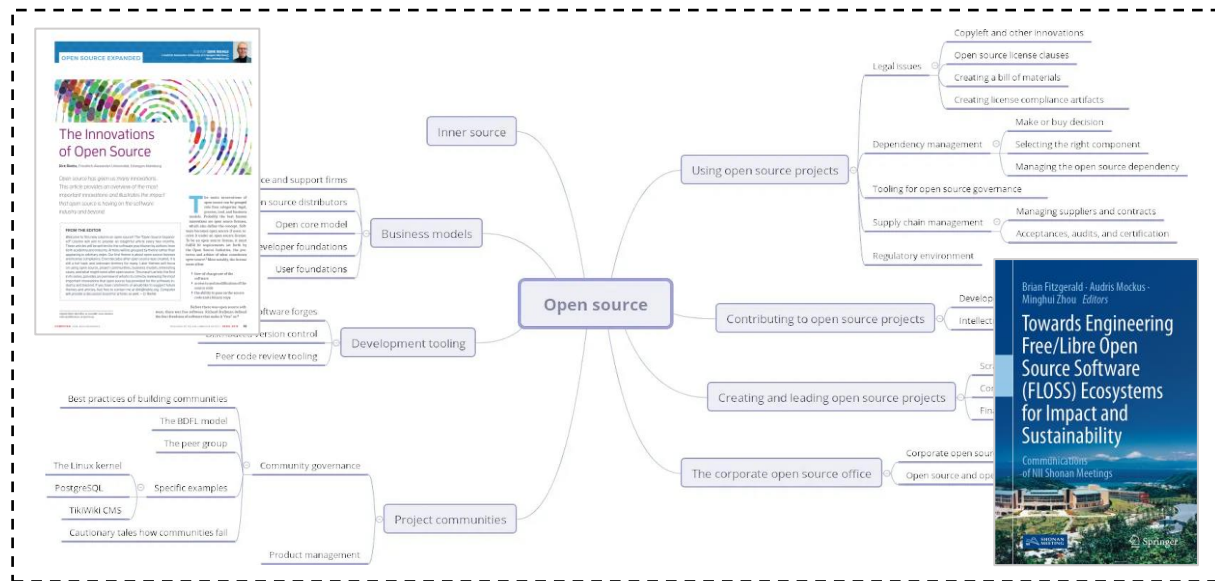
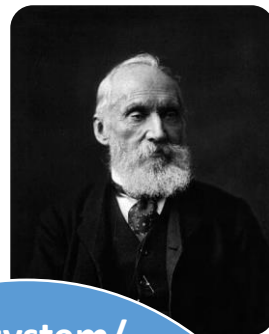
FOUNDING MEMBERS				

MLPerf
AI Benchmarks

Why OSS ecosystem benchmark ?

“When you can measure what you are speaking about, and express it in numbers, you know something about it; but when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meager and unsatisfactory kind.”

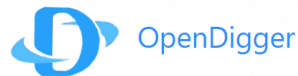
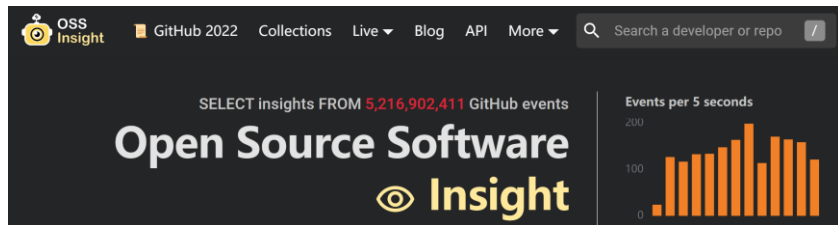
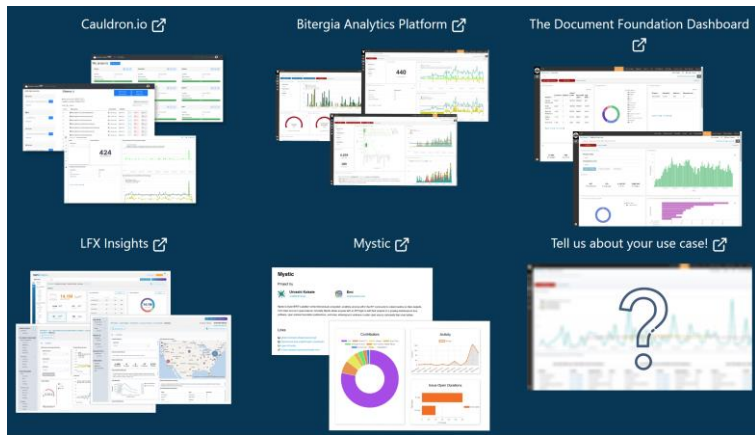
— Lord Kelvin




Open Source Expanded (IEEE Computer magazine column)



Why OSS ecosystem benchmark ?



How ? Bench Council



BenchCouncil: International Open Benchmark Council

[Home](#)
[Benchmarks](#)
[Ranking](#)
[Conferences](#)
[Journal](#)
[Organization](#)
[Awards](#)
[Publications](#)
[Testbed](#)

Challenges

- BigDataBench
- AI Bench
- ScenarioBench
- Clinical AI Bench
- SAIBench
- BENCHCPU
- WPC
- PowerSystemBench
- OLxPBench
- AIoT Ranking

Top Level Projects

- BigDataBench
- AI Bench
- ScenarioBench
- Clinical AI Bench
- SAIBench
- BENCHCPU
- WPC
- PowerSystemBench
- OLxPBench
- AIoT Ranking

Ranking

- BigDataBench
- AI Bench
- ScenarioBench
- Clinical AI Bench
- SAIBench
- BENCHCPU
- WPC
- PowerSystemBench
- OLxPBench
- AIoT Ranking

Incubator Projects

- BENCHCPU
- WPC
- PowerSystemBench
- OLxPBench

Conferences

- Bench 2022
- Bench 2021

International Open Benchmark Council

BenchCouncil is a non-profit organization, HPC, Metaverse, etc.

fundamental responsibilities: establish a benchmarking framework, promote the problems or challenges of emerging technologies, and provide quantitative approaches to tackle multidisciplinary and interdisciplinary challenges.

New:

10/13/2022: TBench Special Issue of "Open-source Computer Systems": Call for Papers (Submission System is open, Free registration).

10/13/2022: Open-source Computer System (OpenCS) Workshop Call for Participation (Nov 10-11, 2022, 8:00 am UTC-5, Preliminary Program, Free registration).

10/13/2022: Bench 2022 Call for Participation (Nov 6-11, 2022, 8:00 am UTC-5, Preliminary Program, Free registration). Highlights: BenchCouncil Achievement Award Lecture; BenchCouncil Rising Star Award Lectures; Paper presentations of Bench 2022 papers and

<https://www.benchcouncil.org/>



The 14th BenchCouncil International Symposium On Benchmarking, Measuring And Optimizing (Bench 2022), Nov 7-9, 2022 (UTC-5)

[Bench 2022](#) Home Call For Contributions Program Committees Awards OpenBench Attend PastConference BenchCouncil

Bench 2022 Virtual Conference, Nov 7-9, 2022 (UTC-5)

Bench 2022 Preliminary Program is released.

Sponsored and organized by the International Open Benchmark Council (BenchCouncil), the Bench conference emphasizes a range of topics in benchmarking, measurement, evaluation methods and tools. Bench multi-disciplinary emphasis on the development of benchmarking, measurement, evaluation methods and tools. Bench multi-disciplinary emphasis on the development of benchmarking, measurement, evaluation methods and tools. Bench multi-disciplinary emphasis on the development of benchmarking, measurement, evaluation methods and tools.

Bench 2022 conference invites manuscripts describing original work in the area of benchmarking, evaluation methods and tools. Bench 2022 conference invites manuscripts describing original work in the area of benchmarking, evaluation methods and tools. Bench 2022 conference invites manuscripts describing original work in the area of benchmarking, evaluation methods and tools.

BenchCouncil Transactions on Benchmarks, Standards and Evaluations

Volume 2, Issue 2, 2022

Editorial

- A BenchCouncil view on benchmarking emerging and future computing

Research Article

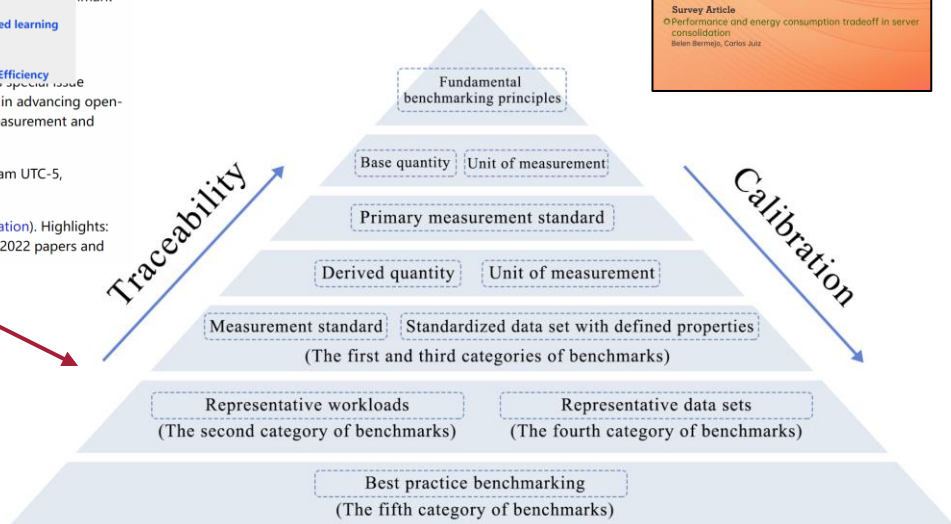
- SAIBench: Benchmarking AI for Science
- An efficient encrypted deduplication scheme with security-enhanced proof of ownership in edge computing

Short Communication

- Asynchronous memory access unit for general purpose processors

Survey Article

- Performance and energy consumption tradeoff in server consolidation



Benchmark hierarchy

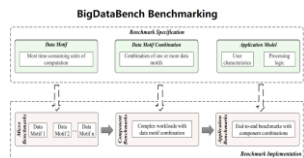
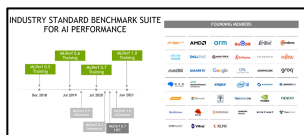
First category

The first category is a **measurement standard**. In the computer discipline, the Linpack benchmark is of this category, which is widely used to report the performance of a high-performance computer.



Second category

The second one is the **representative workloads** that run on the systems under measurement. The application benchmarks or synthetic benchmarks in the computer discipline are of this category.



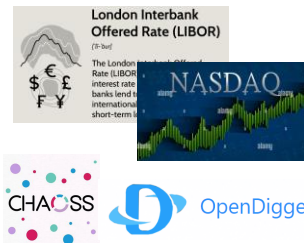
Third category

The third is a **standardized data set** that represents real-world **data science problem**, with defined properties and **ground truth**. This benchmark is often used to measure against different **algorithms**. The state-of-the-art algorithm implementation plus the data set constitutes the benchmark of the second category.



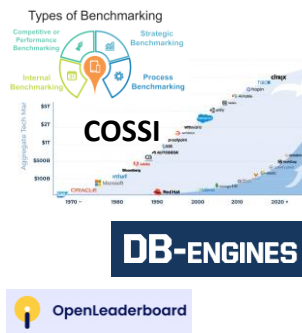
Fourth category

The fourth is a **representative data set**, used as a reference. For example, a financial benchmark is an index (statistical measure), calculated from a representative set of underlying data, is used as a reference for financial instruments or contracts.



Fifth category

The fifth is **the industry best practices** in different domains. Benchmarking is the continuous process of searching the industry best practices that lead to superior performance and measuring products, services, and processes against them.



Goals of OpenBench

- It aims to promote the sustainable growth and evolution of the open source software ecosystem by establishing **benchmarks**, **standards** and **evaluations** of international consensus.
- The forum invites researchers from **industry**, **academia**, **foundations**, **associations** and **government organizations** to jointly explore the frontier direction of open source software ecological benchmarks, , including but not limit to the topics around:
 - OSS metrology and measurement methods
 - OSS measurement data standards,
 - Definition and classification of OSS ecological benchmarks
 - Standard datasets and analysis tasks
 - Indicator system and benchmarking system
 - Application scenarios and cases of open source ecological benchmarking
 - So much more ...

Time	Event
UTC-5 (Washington, New York), 07:50-08:00 UTC (London), 12:50-13:00 UTC+8 (Beijing), 20:50-21:00	Opening remarks
UTC-5 (Washington, New York), 08:00-08:20 UTC (London), 13:00-13:20 UTC+8 (Beijing), 21:00-21:20	Evolution of CHAOSS: How we got where we are from our beginnings Sean P. Goggins , Professor, University of Missouri
UTC-5 (Washington, New York), 08:20-08:40 UTC (London), 13:20-13:40 UTC+8 (Beijing), 21:20-21:40	Data-driven of Open Source & InnerSource community build evaluation Willem Jiang , Open Source Expert of Huawei, Mentor of Huawei InnerSource Foundation,
UTC-5 (Washington, New York), 08:40-09:00 UTC (London), 13:40-14:00 UTC+8 (Beijing), 21:40-22:00	Open Source Security: Challenges, Solutions, and Opportunities Yang LIU , Professor, Nanyang Technological University
UTC-5 (Washington, New York), 09:00-09:20 UTC (London), 14:00-14:20 UTC+8 (Beijing), 22:00-22:20	Explore the Use of Data Heuristics in OSPO work Richard Sikang Bian , Head of Open-Source Program Office (OSPO), Technical Strategy Expert of Ant Group
UTC-5 (Washington, New York), 09:20-09:40 UTC (London), 14:20-14:40 UTC+8 (Beijing), 22:20-22:40	Commercial Participation in OSS: Models, Collaborations, and Turnover Yuxia Zhang , Assistant professor at school of computer science & technology, Beijing Institute of Technology (BIT)
UTC-5 (Washington, New York), 09:40-10:00 UTC (London), 14:40-15:00 UTC+8 (Beijing), 22:40-23:00	Model-informed Automatic Quality Assessment for Open Datasets Jidong Tian & Yaohui Jin , Shanghai Jiao Tong University
UTC-5 (Washington, New York), 10:00-10:20 UTC (London), 15:00-15:20 UTC+8 (Beijing), 23:00-23:20	Community Responsiveness Studies with Apache DevLake Chenhui Zhang , Data Science Lead, Merico DevInsight
UTC-5 (Washington, New York), 10:20-10:40 UTC (London), 15:20-15:40 UTC+8 (Beijing), 23:20-23:40	Measuring qualitative data with predictability Samantha Venia Logan , Expert in Online Community Management and full-stack marketing
UTC-5 (Washington, New York), 10:40-11:00 UTC (London), 15:40-16:00 UTC+8 (Beijing), 23:40-24:00	Round table (discussion) & Closing Remarks

The First International OpenBench Workshop

国际开源软件
生态基准论坛
OpenBench 2022

DATE —
11.06
线上 会议



OpenBench Workshop 2022



该二维码7天内(11月19日前)有效, 重新进入将更新

<https://github.com/X-lab2017/OpenBench>

X-lab2017 / OpenBench
Public
Edit Pins
Unwatch
Fork
Starred

Code
Issues
Pull requests
Actions
Projects
Wiki
Security
Insights
Perceptor
Settings

main
1 branch
0 tags
Go to file
Add file
Code

will-ww Update README.md
61f88da 5 hours ago
2 commits

README.md
Update README.md
5 hours ago

README.md

OpenBench

The International OpenBench Workshop on Benchmarking, Measuring And Optimizing OSS Ecosystems

The First International OpenBench Workshop:
<https://www.benchcouncil.org/bench2022/openbench.html>

OpenBench Workshop 2022 (Sunday, November 6th, 2022, Virtual)

With the continuous development of the global open source ecosystem, it has witnessed the

About

The International OpenBench Workshop on Benchmarking, Measuring And Optimizing OSS Ecosystems

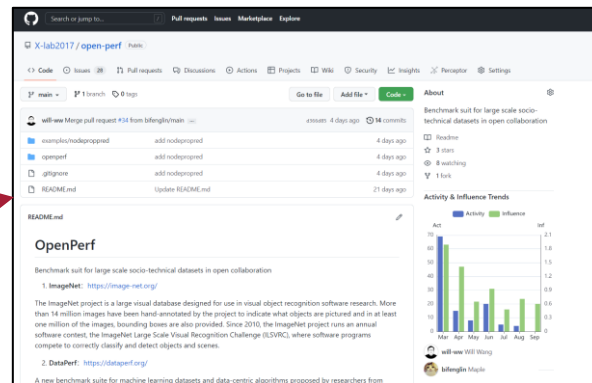
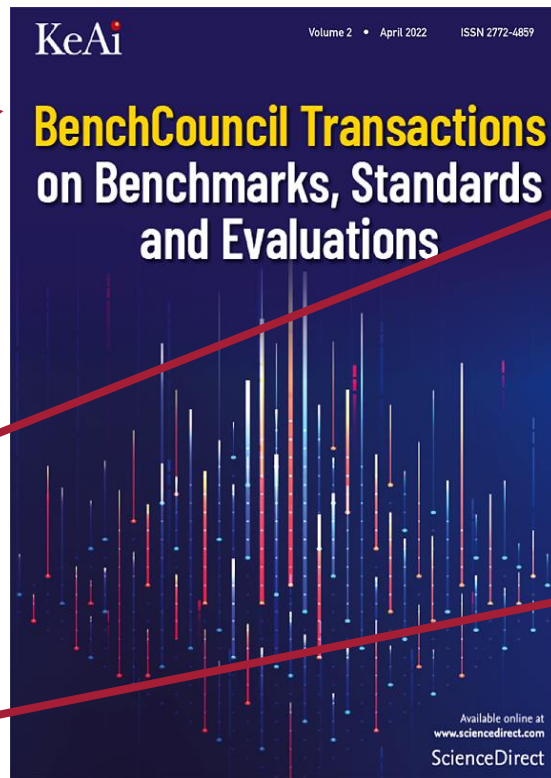
Readme
1 star
5 watching
0 forks

Releases
No releases published
Create a new release

Packages
No packages published
Publish your first package

Future plans (2023)

- Call for **OpenBench program committee (PC)** members
- TBench Special Issue of "Benchmarking Open Source Software Ecosystems for Impact and Sustainability":
Call for Papers
 - Position Papers
 - Full-Length Articles
 - Review Papers
 - Short Communications
- **OpenBench 2023**
 - Topics
 - Call for papers
 - Call for Benchmarks, Standards, data sets, et al.
- **OpenPerf** project/repo



<https://github.com/X-lab2017/open-perf>

The background of the slide features a low-angle photograph of several tall, light-colored classical columns. A large, semi-transparent white diagonal shape cuts across the image from the top-left towards the bottom-right. In the bottom-right corner, there is a solid red triangular shape pointing towards the center.

Thank you !