IISWC 2019, Orlando FL

November 3rd - 5th, 2019

http://www.iiswc.org

2019 Annual IEEE International Symposium on Workload Characterization

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This symposium is dedicated to the understanding and characterization of workloads that run on all types of computing systems. New applications and programming paradigms continue to emerge rapidly as the diversity and performance of computers increase. On one hand, improvements in computing technology are usually based on a solid understanding and analysis of existing workloads. On the other hand, computing workloads evolve and change with advances in microarchitecture, compilers, programming languages, and networking/communication technologies. Whether they are smart phones and deeply embedded systems at the low end or massively parallel systems at the high end, the design of future computing machines can be significantly improved if we understand the characteristics of the workloads that are expected to run on them. This symposium will focus on characterizing and understanding emerging applications in consumer, commercial and scientific computing.

We solicit papers in all areas related to characterization of computing system workloads. Topics of interest include (but are not limited to):

Characterization of applications in domains including

- Memory, storage and file systems
- Cyber-physical systems, pervasive computation and Internet of Things (IoTs)
- Search engines, e-commerce, web services, databases, file/application servers
- Embedded, mobile, multimedia, real-time, 3D-graphics, gaming
- Life sciences, bioinformatics, scientific computing, finance, forecasting
- Machine learning, analytics, data mining
- Blockchain, security, reliability, biometrics
- Cloud and edge computing
- User behavior and system-user interaction

Emerging workloads and architectures, such as

- Transactional memory workloads; workloads for multi/many-core systems
- Stream-based computing workloads; web/internet workloads;
- Near data processing architectures
- Quantum computations and communication
- Near-threshold computation
- Non-volatile memory

Implications of workloads in design issues, such as

- Power management, reliability, security, performance
- Processors, memory hierarchy, I/O, and networks
- Design of accelerators, FPGAs, GPUs, CGRAs, etc.
- Novel architectures (non-Von-Neumann)

Benchmark creation and evaluation, including

- Multithreaded benchmarks, benchmark cloning
- Profiling, trace collection, synthetic traces
- Validation of benchmarks

Characterization of OS/VMM, middleware and library behavior including

- Virtual machines, .NET, Java VM, databases
- Graphics libraries, scientific libraries
- Operating system and hypervisor effects and overheads

Measurement tools and techniques, including

- Instrumentation methodologies for workload verification and characterization
- Techniques for accurate analysis/measurement of production systems
- Analytical and abstract modeling of program behavior and systems

Important Dates:

Abstracts Due: May 24, 2019
Papers Due: May 31, 2019
Author Notification: Aug 15, 2019