CALL FOR PAPERS – 2018 IEEE INTERNATIONAL SYMPOSIUM ON WORKLOAD CHARACTERIZATION

General Chair: Drew Hilton (Duke University) and Brian Rogers (IBM Research)

Program Chair: Carole-Jean Wu (Arizona State University)

Conference Date: September 30 – October 2, 2018
Location: Raleigh, North Carolina

Important Dates

Abstracts Submission: May 11, 2018
Paper Submission: May 18, 2018
Acceptance Notification: July 27, 2018

Topics of Interest

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
  - Blockchain
  - Life sciences, bioinformatics, scientific computing, finance, forecasting
  - Machine learning, analytics, data mining
  - 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; cyber-physical 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, Virtual Machine, 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