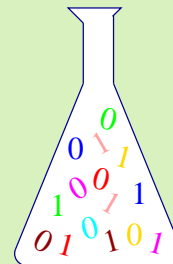# FCRC '07

Workshop on
Experimental Computer Science
Part of ACM FCRC, San Diego, 13-14 June 2007

Call for Papers

This is not a conventional "systems" conference in computer science! First, it takes a broad view including both software and hardware systems, networking, applications, software engineering, and even theory. Second, the focus is on the experimental approach to doing research. High-quality papers are solicited on the nine themes identified below. In particular, we proactively encourage papers that advance the methodological aspects of experimental computer science, or present new real-world data and observations about computer systems and use. A major criterion for acceptance will be that the paper contributes to the discourse on the subject; it does not have to be the definitive final word on it.

1. Experimental engineering: techniques, insights, and understanding that come from building and using computer systems, and discovering behavior that emerges from the inherent complexity of working systems.

2. Measurements and metrics: what to measure, how to achieve reliable measurements in face of noise and errors, and what metrics will turn raw measurements into useful information.

3. Experimental methodology: best practices that should be followed, and pitfalls that need to be avoided.

4. Tools of the trade: measurement tools that support sound instrumentation, tools for automatic flagging of anomalous conditions, and tools for automatic management of experiments.

5. Explanation and hypothesis testing: the study of complex systems, with the goal of achieving a deeper understanding of why they behave in the way they do.

6. Reproducibility: reproducing previous results, the scope to which they pertain, and factors that affect them.

7. Data collection and data manipulation: reports on collecting and using data, including issues like anonymization and sanitization.

8. Theory and practice: cases where theory leads to hypotheses that can be checked experimentally, and cases where experimentation questions assumptions used as a basis for theory.

9. Education and an experimental culture: the need for a cultural change in order to make the experimental approach more prevalent, and development of courses and curricular material.

In the interest of reproducibility and advancing the state of the art, it is highly desirable that papers be accompanied by software and data sets used in the experiments.

Measurement Challenge

In addition to contributed papers, we are planning to have a session devoted to a common measurement challenge, where participants present (and discuss) how they approached a given problem. The challenge this year is to measure the indirect overhead of a context switch, i.e. the degradation in performance due to perturbation of cache state. This is non-trivial, as it obviously depends on myriad details including workload behavior and architecture. To participate, submit a report of your approach and results by the paper submittal deadline. Selected reports will be included in the proceedings.

Roundtable on Experimentation in Computer Science Education

Experimentation and empirical data seem to be all but absent from current computer science curricula. We are planning to hold a roundtable on this issue, with emphasis on operational ways to advance experimentation in computer science education, including the design of complete courses, how to add experimentation into existing courses, and ideas for term projects.
To participate, submit a position paper by the paper submittal deadline. A joint paper summarizing the roundtable will be included in the proceedings.

For more details, submittals, and up-to-date information, see http://www.expcs.org

Important Dates

submittal:	9 Feb 2007
notification:	23 Mar 2007
final:	7 May 2007

Organizers
Dror Feitelson
Larry Rudolph

Finance Chair
Derek Chiou

Steering Committee
William J. Dally
Jack J. Dongarra
David S. Johnson
Daniel A. Menascé
Yale N. Patt
Vern Paxson
Alan J. Smith

Program Committee
Martin Arlitt
Krste Asanović
Derek Chiou
Mark Crovella
Richard Golding
Peter Honeyman
Windsor W. Hsu
Kevin Jeffay
Natalia Juristo
Darren Kerbyson
David J. Lilja
Jeanna Matthews
Roy A. Maxion
Barton P. Miller
Yale N. Patt
Jonathan Schaeffer
Karsten Schwan
Margo Seltzer
Yuval Shavitt
Matthias F. Stallmann
Jim Waldo
Walter Willinger
Marvin V. Zelkowitz

Sponsors
ACM SIGARCH
ACM SIGOPS
in cooperation with
ACM SIGCOMM
ACM SIGMETRICS
USENIX