

International Workshop on Performance Modeling, Evaluation, and Optimization of Parallel and Distributed Systems (PMEO-PDS'03)

1. Preface

Welcome to PMEOPDS'03! This is the second time a one-day workshop on Performance Modeling, Evaluation, and Optimization of Parallel and Distributed Systems is being held in conjunction with IPDPS.

Performance modeling, evaluation, and optimization of parallel and distributed systems have been an important and fundamental research topic over the past years and poses challenging problems that require innovative tools and techniques to keep up with the rapid evolution and increasing complexity of such systems. The workshop aims to provide a forum for scientists, engineers, practitioners, and computer users to share their experience and report state-of-the-art and in-progress research in this research field.

In response to the Call for Papers, 32 submissions have been received from all over the world. All submissions were peer reviewed by at least two program committee members and/or external reviewers. The manuscripts have been ranked according to their original contribution and relevance to the theme of the workshop. Nineteen papers have been selected for inclusion in the conference proceedings. The range of topics covered by these papers is quite broad, reflecting the importance of performance related topics at all levels of parallel and distributed systems.

We would like to thank the IPDPS Workshop Organizing Committee for giving us this opportunity to organize PMEOPDS'03, especially to the IPDPS Workshops Chair, Prof. C. Weems, for his great help. Our thanks also go to all authors for their valuable contributions and to all program committee members and reviewers for providing timely and in-depth reviews. Last but not the least, we thank the attendees of this workshop. We hope you will enjoy the program!

2. Workshop Co-Chairs

Geyong Min
Department of Computing
University of Bradford
Bradford, BD7 1DP
U.K.

Mohamed Ould-Khaoua
Department of Computing Science
University of Glasgow
Glasgow, G12 8RZ
U.K.

3. Program Committee

Abdel-Elah Al-Ayyoub, Arab Open Univ. (Jordan)
Khalid Al-Begain, Univ. of Bradford (UK)
Hamid R. Arabnia, Univ. of Georgia (USA)
Mark Baker, Univ. of Portsmouth (UK)
Azzedine Boukerche, Univ. of North Texas (USA)
Michele Colajanni, Univ. of Modena (Italy)
Chita R. Das, Penn State Univ. (USA)
Khaled Day, Sultane Qaboos Univ. (Oman)
Karim Djemame, Univ. of Leeds (UK)
Tarek El-Ghazawi, George Washington University (USA)
Erol Gelenbe, Univ. of Central Florida (USA)
Pete Harrison, Imperial College London (UK)
Armin Heindl, Technical University of Berlin (Germany)
Xubin He, Tennessee Technological Univ. (USA)
Stephen Jarvis, Univ. of Warwick (UK)
Krishna Kant, Intel Corporation (USA)
Demetres D. Kouvatso, Univ. of Bradford (UK)
Keqin Li, State Univ. of New York at New Paltz (USA)
Zhen Liu, IBM T. J. Watson Research Center (USA)
Samia Loucif, Emerates University, (UAE)
Lewis M. Mackenzie, Univ. of Glasgow (UK)

Mohammad S. Obaidat, Monmouth Univ. (USA)
Yi Pan, Georgia State Univ. (USA)
Fethi A. Rabhi, Univ. of New South Wales (AUSTRALIA)
Hamid Sarbazi-Azad, Univ. of Glasgow (UK)
Erich Schikuta, Univ. of Vienna (AUSTRIA)
Alireza Shahrabi, Univ. of Glasgow (UK)
Enmin Song, Univ. of California at San Francisco (USA)
Xian-He Sun, Illinois Institute of Technology (USA)
Nigel Thomas, Univ. of Durham (UK)
Mike E Woodward, Univ. of Bradford (UK)
Jie Wu, Florida Atlantic Univ. (USA)
Cheng-Zhong Xu, Wayne State Univ. (USA)
Qing Yang, Univ. of Rhode Island (USA)
Xiaodong Zhang, College of William and Mary (USA)

4. Workshop Program (SATURDAY, APRIL 26, 2002)

Welcome and Workshop Introduction

Session 1:

1. Performance Prediction and its Use in Parallel and Distributed Computing Systems
S.A. Jarvis, D.P. Spooner, H.N. Lim Choi Keung, G.R. Nudd (*High Performance Systems Group, Department of Computing Science, University of Warwick, UK*), J. Cao (*C&C Research Laboratories, NEC Europe Ltd, Germany*), S. Saini (*NASA Ames Research Center, Moffett Field, California, USA*)
2. A Performance Interface for Component-Based Applications
S. Shende, A.D. Malony (*Department of Computer & Information Science, University of Oregon, USA*), C. Rasmussen, M. Sottile (*Advanced Computing Laboratory, Los Alamos National Laboratory, USA*)
3. Performance Prediction of Paging Workloads Using Lightweight Tracing
A.N. Burton, P.H.J. Kelly (*Department of Computing, Imperial College, London, UK*)
4. A Statistical Approach to Branch Modeling in Static Program Performance Prediction
H. Gautama, A.J.C. van Gemund (*Faculty of Information Technology and Systems, Delft University of Technology, Netherlands*)
5. Dynamic Grid vs. Region Grid Based Data Distribution Management Strategies for Large-Scale Distributed Systems
A. Boukerche, C. Dzermajko (*Department of Computer Science, University of North of Texas, USA*)

Session 2:

6. Performance Monitoring and Evaluation of a UPC Implementation on a NUMA Architecture
F. Cantonnet, Y. Yao, S. Annareddy, A.S. Mohamed, T.A. El-Ghazawi (*Department of Electrical and Computer Engineering, The George Washington University, USA*)
7. System Level Simulation of a SIMD Active Memory Enhanced PC
J.P. Mangnall, S.F. Quigley (*Department of Electronic, Electrical & Computer Engineering, University of Birmingham, UK*)
8. Accessing Hardware Performance Counters in order to Measure the Influence of Cache on the Performance of Integer Sorting
C. C'erin (*Universit'e de Picardie Jules Verne, LaRIA, Bat Curi, 5 rue du moulin neuf, F-80000 Amiens - France*), H. Fkaier, M. Jemni (*Universit'e de Tunis EL MANAR, Facult'e des Sciences de Tunis, Laboratoire LIP2, 1060, Belv'ed'ere Tunis - Tunisie*)

9. Performance Modeling of the Grace Hash Join on Cluster Architectures
E. Schikuta (*Institut für Informatik und Wirtschaftsinformatik, University of Vienna, Austria*)
10. Use of the Parallel Port to Measure MPI Intertask Communication Costs in COTS PC Clusters
M. Haridasan, G.H. Pfitscher (*Department of Computer Science, University of Brasília, Brazil*)

Session 3:

11. Multicast Communication in Interconnection Networks with Background Traffic
D.D. Kouvatso, I.M. Mkwawa (*Department of Computing, University of Bradford, UK*)
12. An Efficient Path-Based Multicast Algorithm for Mesh Networks
A.Y. Al-Dubai, M. Ould-Khaoua, L.M. Mackenzie (*Department of Computing Science, University of Glasgow, UK*)
13. Partial Path Setup for Fault Tolerant Routing in Hypercubes
D. Xiang, A. Chen (*Institute of Microelectronics, Tsinghua University, P.R. China*)
14. A Study of an Evaluation Methodology for Unbuffered Multistage Interconnection Networks
A.C. Aljundi, J.L. Dekeyser (*Laboratoire d'Informatique Fondamentale de Lille, Université des Sciences et Technologies de Lille, France*), M.T. Kechadi (*Parallel Computational Research Group, University College Dublin, Ireland*), I.D. Scherson (*Department of Information and Computer Science, University of California, USA*)
15. Performance Properties of Combined Heterogeneous Networks
N. Mohamed, J. Al-Jaroodi, H. Jiang, D. Swanson, (*Department of Computer Science and Engineering, University of Nebraska-Lincoln, USA*)

Session 4:

16. Memory-Efficient Kronecker Algorithms with Applications to the Modelling of Parallel Systems
A. Benoit, B. Plateau (*Laboratoire Informatique et Distribution, ENSIMAG - Antenne de Montbonnot, France*), W.J. Stewart (*Department of Computer Science, North Carolina State University, USA*)
17. Distributed Computation of Passage Time Quantiles and Transient State Distributions in Large Semi-Markov Models
J.T. Bradley, N.J. Dingle, P.G. Harrison, W.J. Knottenbelt (*Department of Computing, Imperial College, London, UK*)
18. Approximation in Non-Product Form Multiple Queue Systems
Nigel Thomas (*Department of Computer Science, University of Durham*)
19. CORBA Benchmarking: A Course with Hidden Obstacles
A. Buble, L. Bulej, P. Tuma (*Charles University in Prague, Faculty of Mathematics and Physics, Department of Software Engineering, Prague, Czech Republic*)