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COMPUTER SYSTEMS PERFORMANCE EVALUATION AND PREDICTION

Elsevier **Computer Systems Performance Evaluation and Prediction bridges the gap from academic to professional analysis of computer performance. This book makes analytic, simulation and instrumentation based modeling and performance evaluation of computer systems components understandable to a wide audience of computer systems designers, developers, administrators, managers and users. The book assumes familiarity with computer systems architecture, computer systems software, computer networks and mathematics including calculus and linear algebra. · Fills the void between engineering practice and the academic domain's treatment of computer systems performance evaluation and assessment · Provides a single source where the professional or student can learn how to perform computer systems engineering tradeoff analysis · Allows managers to realize cost effective yet optimal computer systems tuned to a specific application**

COMPUTER SYSTEMS PERFORMANCE, EVALUATION AND PREDICTION

PERFORMANCE EVALUATION AND PREDICTION OF COMPUTER SYSTEMS USING COMPUTER SIMULATION

A THESIS

COMPUTER SYSTEMS PERFORMANCE EVALUATION AND PREDICTION

Digital Press **Table of contents**

COMPUTER SYSTEMS: OVERVIEW, PERFORMANCE EVALUATION AND PERFORMANCE PREDICTION

PERFORMANCE EVALUATION, PREDICTION AND VISUALIZATION OF PARALLEL SYSTEMS

Springer Science & Business Media **Performance Evaluation, Prediction and Visualization in Parallel Systems presents a comprehensive and systematic discussion of theoretics, methods, techniques and tools for performance evaluation, prediction and visualization of parallel systems. Chapter 1 gives a short overview of performance degradation of parallel systems, and presents a general discussion on the importance of performance evaluation, prediction and visualization of parallel systems. Chapter 2 analyzes and defines several kinds of serial and parallel runtime, points out some of the weaknesses of parallel speedup metrics, and discusses how to improve and generalize them. Chapter 3 describes formal definitions of scalability, addresses the basic metrics affecting the scalability of parallel systems, discusses scalability of parallel systems from three aspects: parallel architecture, parallel algorithm and parallel algorithm-architecture combinations, and analyzes the relations of scalability and speedup. Chapter 4 discusses the methodology of performance measurement, describes the benchmark- oriented performance test and analysis and how to measure speedup and scalability in practice. Chapter 5 analyzes the difficulties in performance prediction, discusses application-oriented and architecture-oriented performance prediction and how to predict speedup and scalability in practice. Chapter 6 discusses performance visualization techniques and tools for parallel systems from three stages: performance data collection, performance data filtering and performance data visualization, and classifies the existing performance visualization tools. Chapter 7 describes parallel compiling-based, search-based and knowledge-based performance debugging, which assists programmers to optimize the strategy or algorithm in their parallel programs, and presents visual programming-based performance debugging to help programmers identify the location and cause of the performance problem. It also provides concrete suggestions on how to modify their parallel program to improve the performance. Chapter 8 gives an overview of current interconnection networks for parallel systems, analyzes the scalability of interconnection networks, and discusses how to measure and improve network performances. Performance Evaluation, Prediction and Visualization in Parallel Systems serves as an excellent reference for researchers, and may be used as a text for advanced courses on the topic.**

WORKLOAD MODELING FOR COMPUTER SYSTEMS PERFORMANCE EVALUATION

Cambridge University Press **A book for experts and practitioners, emphasizing the intuition and reasoning behind definitions and derivations related to evaluating computer systems performance.**

PERFORMANCE EVALUATION AND PREDICTION FOR LARGE HETEROGENEOUS DISTRIBUTED SYSTEMS

THE ART OF COMPUTER SYSTEMS PERFORMANCE ANALYSIS:

John Wiley & Sons **Part I: An Overview of Performance Evaluation · Common Mistakes and How to Avoid Them· Selection of Techniques and Metrics· MEASUREMENT TECHNIQUES AND TOOLS· Types of Workloads· Workload Characterization Techniques· Monitors· Ratio GamesPart II: Probability Theory and Statistics · Summarizing Measured Data· Simple Linear Regression Models· Other Regression ModelsPart III: Experimental Design and Analysis · One-Factor Experiments· Two-Factor Full Factorial Design without Replications· Two-Factor Full Factorial Design with ReplicationsPart IV: Simulation· Analysis of Simulation Results· Testing Random-Number Generators· Commonly Used DistributionsPart V: Queuing Models· Analysis of a Single Queue· Operational Laws · Convolution Algorithm**

HIGH PERFORMANCE COMPUTING SYSTEMS

19TH SYMPOSIUM, WSCAD 2018, SÃO PAULO, BRAZIL, OCTOBER 1–3, 2018, REVISED SELECTED PAPERS

Springer Nature **This book constitutes the refereed proceedings of the 19th Symposium on High Performance Computing System, WSCAD 2018, held in São Paulo, Brazil, in October 2018. The 12 revised full papers presented were carefully reviewed and selected out of 61 submissions. The papers included in this book are organized according to the following topics: cloud computing; performance; processors and memory architectures; power and energy.**

NBS SPECIAL PUBLICATION

PUBLICATIONS

PUBLICATIONS OF THE NATIONAL BUREAU OF STANDARDS ... CATALOG

PUBLICATIONS OF THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY ... CATALOG

PERFORMANCE EVALUATION OF COMPUTER AND COMMUNICATION SYSTEMS

CRC Press **This book is written for computer engineers and scientists active in the development of software and hardware systems. It supplies the understanding and tools needed to effectively evaluate the performance of individual computer and communication systems. It covers the theoretical foundations of the field as well as specific software packages being employed by leaders in the field.**

PUBLICATIONS OF THE NATIONAL BUREAU OF STANDARDS 1975 CATALOG

A COMPILATION OF ABSTRACTS AND KEY WORD AND AUTHOR INDEXES

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A COMPILATION OF ABSTRACTS AND KEY WORD AND AUTHOR INDEXES

HIGH PERFORMANCE COMPUTING SYSTEMS. PERFORMANCE MODELING, BENCHMARKING, AND SIMULATION

5TH INTERNATIONAL WORKSHOP, PMBS 2014, NEW ORLEANS, LA, USA, NOVEMBER 16, 2014. REVISED SELECTED PAPERS

Springer **This book constitutes the thoroughly refereed proceedings of the 5th International Workshop, PMBS 2014 in New Orleans, LA, USA in November 2014. The 12 full and 2 short papers presented in this volume were carefully reviewed and selected from 53 submissions. The papers cover topics on performance benchmarking and optimization; performance analysis and prediction; and power, energy and checkpointing.**

ADVANCES IN COMPUTER SYSTEMS ARCHITECTURE

10TH ASIA-PACIFIC CONFERENCE, ACSAC 2005, SINGAPORE, OCTOBER 24-26, 2005, PROCEEDINGS

Springer Science & Business Media **This book constitutes the refereed proceedings of the 10th Asia-Pacific Computer Systems Architecture Conference, ACSAC 2005, held in Singapore in October 2005. The 65 revised full papers presented were carefully reviewed and selected from 173 submissions. The papers are organized in topical sections on energy efficient and power aware techniques, methodologies and architectures for application-specific systems,**

processor architectures and microarchitectures, high-reliability and fault-tolerant architectures, compiler and OS for emerging architectures, data value predictions, reconfigurable computing systems and polymorphic architectures, interconnect networks and network interfaces, parallel architectures and computation models, hardware-software partitioning, verification, and testing of complex architectures, architectures for secured computing, simulation and performance evaluation, architectures for emerging technologies and applications, and memory systems hierarchy and management.

CATALOG OF NATIONAL BUREAU OF STANDARDS PUBLICATIONS, 1966-1976: PT. 1-2. CITATIONS AND ABSTRACTS. V. 2. PT. 1-2. KEY WORD INDEX

PUBLICATIONS OF THE NATIONAL BUREAU OF STANDARDS 1977 CATALOG

A COMPILATION OF ABSTRACTS AND KEY WORD AND AUTHOR INDEXES

SCIENTIFIC AND TECHNICAL AEROSPACE REPORTS

COMPUTER PERFORMANCE EVALUATION USERS GROUP (CPEUG)

PROCEEDINGS OF THE FOURTEENTH MEETING, HELD AT BOSTON, MASSACHUSETTS, OCTOBER 24-27, 1978

COMPUTER PERFORMANCE EVALUATION USERS GROUP (CPEUG)

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PARALLEL COMPUTING

ARCHITECTURES, ALGORITHMS, AND APPLICATIONS

IOS Press **ParCo2007 marks a quarter of a century of the international conferences on parallel computing that started in Berlin in 1983. The aim of the conference is to give an overview of the developments, applications and future trends in high-performance computing for various platforms.**

THE FUTURE OF COMPUTING PERFORMANCE

GAME OVER OR NEXT LEVEL?

National Academies Press **The end of dramatic exponential growth in single-processor performance marks the end of the dominance of the single microprocessor in computing. The era of sequential computing must give way to a new era in which parallelism is at the forefront. Although important scientific and engineering challenges lie ahead, this is an opportune time for innovation in programming systems and computing architectures. We have already begun to see diversity in computer designs to optimize for such considerations as power and throughput. The next generation of discoveries is likely to require advances at both the hardware and software levels of computing systems. There is no guarantee that we can make parallel computing as common and easy to use as yesterday's sequential single-processor computer systems, but unless we aggressively pursue efforts suggested by the recommendations in this book, it will be "game over" for growth in computing performance. If parallel programming and related software efforts fail to become widespread, the development of exciting new applications that drive the computer industry will stall; if such innovation stalls, many other parts of the economy will follow suit. The Future of Computing Performance describes the factors that have led to the future limitations on growth for single processors that are based on complementary metal oxide semiconductor (CMOS) technology. It explores challenges inherent in parallel computing and architecture, including ever-increasing power consumption and the escalated requirements for heat dissipation. The book delineates a research, practice, and education agenda to help overcome these challenges. The Future of Computing Performance will guide researchers, manufacturers, and information technology professionals in the right direction for sustainable growth in computer performance, so that we may all enjoy the next level of benefits to society.**

CMG '87, PRELIMINARY AGENDA

INTERNATIONAL CONFERENCE ON MANAGEMENT AND PERFORMANCE EVALUATION OF COMPUTER SYSTEMS, ORLANDO, DECEMBER 7-11, 1987

CPU PERFORMANCE EVALUATION AND EXECUTION TIME PREDICTION USING NARROW SPECTRUM BENCHMARKING

We have developed tools to measure the performance of a variety of machines, from workstations to supercomputers. We have also characterized the execution of many large applications, including the SPEC and Perfect benchmark suites. By merging these machine and program characterizations, we can estimate execution times quite accurately for arbitrary machine-program combinations. Another aspect of the research has consisted in characterizing the effectiveness of optimizing compilers. Another contribution of this dissertation is to propose and investigate new metrics for machine and program similarity and the information that can be derived from them.

COMPUTER PERFORMANCE EVALUATION USERS GROUP (CPEUG)

PROCEEDINGS OF THE THIRTEENTH MEETING HELD AT NEW ORLEANS, LOUISIANA OCTOBER 11-14, 1977

QUANTITATIVE EVALUATION OF COMPUTING AND COMMUNICATION SYSTEMS

8TH INTERNATIONAL CONFERENCE ON MODELLING TECHNIQUES AND TOOLS FOR COMPUTER PERFORMANCE EVALUATION, PERFORMANCE TOOLS '95, 8TH GI/ITG CONFERENCE ON MEASURING, MODELLING AND EVALUATING COMPUTING AND COMMUNICATION SYSTEMS, MMB '95HEIDELBERG, GERMANY, SEPTEM

Springer Science & Business Media **This book constitutes the proceedings of the 8th International Conference on Modelling Techniques and Tools for Computer Performance Evaluation (Performance Tools '95) and of the 8th GI/ITG Conference on Measuring, Modelling and Evaluating Computing and Communication Systems, MMB '95, held jointly in Heidelberg, Germany in September 1995. The volume presents 26 full refereed papers selected from a total of 86 submissions, together with two invited contributions. The scope of the papers includes measurement- and model-based approaches for quantitative systems assessment, reports on theoretical and methodological progress, and novel and improved assessment techniques and their tool implementations and applications.**

RESILIENCE ASSESSMENT AND EVALUATION OF COMPUTING SYSTEMS

Springer Science & Business Media **The resilience of computing systems includes their dependability as well as their fault tolerance and security. It defines the ability of a computing system to perform properly in the presence of various kinds of disturbances and to recover from any service degradation. These properties are immensely important in a world where many aspects of our daily life depend on the correct, reliable and secure operation of often large-scale distributed computing systems. Wolter and her co-editors grouped the 20 chapters from leading researchers into seven parts: an introduction and motivating examples, modeling techniques, model-driven prediction, measurement and metrics, testing techniques, case studies, and conclusions. The core is formed by 12 technical papers, which are framed by motivating real-world examples and case studies, thus illustrating the necessity and the application of the presented methods. While the technical chapters are independent of each other and can be read in any order, the reader will benefit more from the case studies if he or she reads them together with the related techniques. The papers combine topics like modeling, benchmarking, testing, performance evaluation, and dependability, and aim at academic and industrial researchers in these areas as well as graduate students and lecturers in related fields. In this volume, they will find a comprehensive overview of the state of the art in a field of continuously growing practical importance.** *IOS Press*

COMPUTER SYSTEMS THAT LEARN

CLASSIFICATION AND PREDICTION METHODS FROM STATISTICS, NEURAL NETS, MACHINE LEARNING, AND EXPERT SYSTEMS

Morgan Kaufmann Pub **This book is a practical guide to classification learning systems and their applications. These computer programs learn from sample data and make predictions for new cases, sometimes exceeding the performance of humans. Practical learning systems from statistical pattern recognition, neural networks, and machine learning are presented. The authors examine prominent methods from each area, using an engineering approach and taking the practitioner's viewpoint. Intuitive explanations with a minimum of mathematics make the material accessible to anyone--regardless of experience or special interests. The underlying concepts of the learning methods are discussed with fully worked-out examples: their strengths and weaknesses, and the estimation of their future performance on specific applications. Throughout, the authors offer their own recommendations for selecting and applying learning methods such as linear discriminants, back-propagation neural networks, or decision trees. Learning systems are then contrasted with their rule-based counterparts from expert systems.**

LECTURES ON THE MEASUREMENT AND EVALUATION OF THE PERFORMANCE OF COMPUTING SYSTEMS

SIAM **The scope of the discussion is limited to certain types of general purpose computing systems whose characteristics involve multiprogramming, multiprocessors, communication lines serving many users, and on-line terminal systems. The goal is to gain a better understanding of computing systems through the techniques of measurement and performance evaluation.**

MEASURING COMPUTER PERFORMANCE

A PRACTITIONER'S GUIDE

Cambridge University Press **Sets out the fundamental techniques used in analyzing and understanding the performance of computer systems.**

STATISTICAL COMPUTER PERFORMANCE EVALUATION

PROCEEDINGS OF A CONFERENCE HELD AT BROWN UNIVERSITY, PROVIDENCE, RHODE ISLAND, NOVEMBER

22-23, 1971 UNDER THE AUSPICES OF THE DIVISION OF APPLIED MATHEMATICS AND THE CENTER FOR COMPUTER AND INFORMATION SCIENCES, AND SUPPORTED BY THE OFFICE OF NAVAL RESEARCH

SIGMETRICS '07

PROCEEDINGS OF THE 2007 INTERNATIONAL CONFERENCE ON MEASUREMENT AND MODELING OF COMPUTER SYSTEMS : JUNE 12-16, 2007, SAN DIEGO, CALIFORNIA, USA