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SCALABLE COMPUTING AND COMMUNICATIONS

Theory and Practice

Samee U. Khan
Albert Y. Zomaya
Lizhe Wang

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Scalable Computing and Communications

Theory and Practice

Edited by

Samee U. Khan
North Dakota State University

Albert Y. Zomaya
University of Sydney, Australia

Lizhe Wang
Chinese Academy of the Sciences

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Scalable Computing and Communications

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To Our Parents

Preface

Scalable computing and communications includes environments such as autonomic, cloud, cluster, distributed, energy-aware, parallel, peer-to-peer, green, grid, and utility computing environments. The aforementioned paradigms are necessary to promote collaboration between entities and resources, which are necessary and beneficial to complex scientific, industrial, and business applications, which include weather forecasting, computational biology, telemedicine, drug synthesis, vehicular technology, design and fabrication, finance, and simulations. Therefore, scalable computing is at the heart of all complex applications.

Scalable computing and communications involves the use of computing facilities, which can readily adapt to the demands of more powerful computing and communication capabilities. Scalability is a desirable property for many scientific, industrial, and business applications. Moreover, scalability is also an important feature for hardware, as a computing facility can be scaled as and when there is a need to add computing and communication modules.

There have been great developments and advances in the aforementioned research fields. It is thus a good time to gather current progress in research in a book collection in order to document research achievements and to identify future directions.

To that end, this book on scalable computing and communications presents, discusses, and shares ideas, results, and experiences regarding recent important advances and future challenges. The compiled work ranges from theory to practice, software to hardware, and concepts to prototypes.

We sincerely hope that you will enjoy this compilation, which is hoped to cater to a wide audience.

SAMEE U. KHAN

North Dakota State University, Fargo, ND

ALBERT Y. ZOMAYA

University of Sydney, Sydney, NSW, Australia

LIZHE WANG

Chinese Academy of Sciences, Beijing, China

Contributors

MOHAMMED I. ALGHAMDI, Al-Baha University, Al-Baha City, Kingdom of Saudi Arabia

RITU ARORA, Texas Advanced Computing Center, University of Texas at Austin, Austin, TX

PAVAN BALAJI, Mathematics and Computer Science Division, Argonne National Laboratory, Argonne, IL; Virginia Tech

PURUSHOTHAM BANGALORE, Department of Computer and Information Sciences, University of Alabama at Birmingham, Birmingham, AL

IOANA BANICESCU, Department of Computer Science and Engineering, Mississippi State University, Mississippi State, MS

DOINA BEIN, Applied Research Laboratory, Information Science and Technology Division, Pennsylvania State University, University Park, PA

WOLFGANG W. BEIN, Center for Information Technology and Algorithms, School of Computer Science, University of Nevada, Las Vegas, NV

LADJEL BELLATRECHE, LIAS/ENSMA—Poitiers University, France

SOUMIA BENKRID, LIAS/ENSMA—Poitiers University, France

KASHIF BILAL, Department of Electrical and Computer Engineering, North Dakota State University, Fargo, ND

GEORGE BOSILCA, Innovative Computing Laboratory, The University of Tennessee, Knoxville, TN

KAMEL BOUKHALFA, USTHB University, Algeria

AURELIEN BOUTEILLER, Innovative Computing Laboratory, The University of Tennessee, Knoxville, TN

PASCAL BOUVRY, University of Luxembourg, Luxembourg, Luxembourg

DARIUS BUNTINAS, Mathematics and Computer Science Division, Argonne National Laboratory, Argonne, IL

KIRK W. CAMERON, Virginia Tech, Blacksburg, VA

JIANNONG CAO, The Hong Kong Polytechnic University, Hong Kong

FRANCK CAPPELLO, INRIA Saclay-Ile de France, Orsay, France
HAROLD CASTRO, Universidad de los Andes Bogota D.C., Colombia
HARRISON CHANDLER, Clemson University, Clemson, SC
HAO CHE, The University of Texas at Arlington, Arlington, TX
JINJUN CHEN, School of Systems, Management and Leadership, University of Technology, Sydney, Australia
KUN-TA CHUANG, National Cheng Kung University, Tainan, Taiwan
FLORINA M. CIORBA, Center for Information Services and High Performance Computing, Technische Universit at Dresden, Dresden, Germany
CAMILLE COTI, LIPN, CNRS-UMR7030, Université Paris 13, Villetaneuse, France
ANTHONY DANALIS, Innovative Computing Laboratory, The University of Tennessee, Knoxville, TN
XI DENG, Stony Brook University, Stony Brook, NY
CESAR O. DIAZ, University of Luxembourg, Luxembourg, Luxembourg
JAMES DINAN, Mathematics and Computer Science Division, Argonne National Laboratory, Argonne, IL
MATTHEW DOERKSEN, Department of Computer Science, University of Manitoba, Winnipeg, Manitoba, Canada
JACK J. DONGARA, Innovative Computing Laboratory, The University of Tennessee, Knoxville, TN
WU-CHUN FENG, Department of Computer Science, Virginia Tech, Blacksburg, VA
NASIR GHANI, University of New Mexico, Albuquerque, NM
ANN GORDON-ROSS, Department of Electrical and Computer Engineering, University of Florida, Gainesville, FL
JING (SELENA) HE, Department of Computer Science, Georgia State University, Atlanta, GA
THOMAS HERAULT, Innovative Computing Laboratory, The University of Tennessee, Knoxville, TN
SUN-YUAN HSIEH, National Cheng Kung University, Tainan, Taiwan
BLAKE HURD, Temple University, Philadelphia, PA
ALI R. HURSON, Missouri University of Science and Technology, Rolla, MO
SHOULING JI, Department of Computer Science, Georgia State University, Atlanta, GA
XIN JIN, The University of Hong Kong, Pokfulam, Hong Kong
MIAO JU, The University of Texas at Arlington, Arlington, TX
HUN JUNG, The University of Texas at Arlington, Arlington, TX
KHALED M. KHAN, Department of Computer Science and Engineering, Qatar University, Qatar
SAMEE ULLAH KHAN, Department of Electrical and Computer Engineering, North Dakota State University, Fargo, ND
DRIES KIMPE, Mathematics and Computer Science Division, Argonne National Laboratory, Argonne, IL
JOANNA KOLODZIEJ, University of Bielsko-Biala, Department of Mathematics and Computer Science, Bielsko-Biala, Poland
VLADIK KREINOVICH, Department of Computer Science, University of Texas at El Paso, El Paso, TX
YU-KWONG KWOK, The University of Hong Kong, Pokfulam, Hong Kong
CHIA-WEI LEE, National Cheng Kung University, Tainan, Taiwan

DONG LI, Oak Ridge National Laboratory, Small Oak Ridge, TN
KEQIN LI, State University of New York, New Paltz, NY
YINGSHU LI, Department of Computer Science, Georgia State University, Atlanta, GA
ZE LI, Clemson University, Clemson, SC
GUOXIN LIU, Clemson University, Clemson, SC
FENGSHUN LU, College of Computer, National University of Defense Technology, Changsha, China
PIOTR LUSZCZEK, Innovative Computing Laboratory, The University of Tennessee, Knoxville, TN
NAM MA, University of Southern California, Los Angeles, CA
QUTAIBAH MALLUHI, Department of Computer Science and Engineering, Qatar University, Qatar
MARJAN MERNIK, Institute of Computer Science, University of Maribor, Maribor, Slovenia
NASRO MIN-ALLAH, COMSATS Institute of Information Technology, Islamabad, Pakistan
ARSLAN MUNIR, University of Toronto, Toronto, Ontario, Canada
DIMITRIOS S. NIKOLOPOULOS, FORTH-ICS and University of Crete, Heraklion, Crete, Greece
YI PAN, Department of Computer Science, Georgia State University, Atlanta, GA
JOHNATAN PECERO, University of Luxembourg, Luxembourg, Luxembourg
VIKTOR K. PRASANNA, University of Southern California, Los Angeles, CA
FANG QI, Clemson University, Clemson, SC
XIAO QIN, Auburn University, Auburn, AL
SANJAY RANKA, Department of Computer and Information Science and Engineering, University of Florida, Gainesville, FL
KAIJUN REN, College of Computer, National University of Defense Technology, Changsha, China
PASCAL RICHARD, LIAS/ENSMA—Poitiers University, France
XIAOJUN RUAN, West Chester University of Pennsylvania, West Chester, PA
SAHRA SEDIGH, Missouri University of Science and Technology, Rolla, MO
HAIYING SHEN, Clemson University, Clemson, SC
BEHROOZ SHIRAZI, Washington State University, Pullman, WA
JOANNA SIEBERT, The Hong Kong Polytechnic University, Hong Kong
JUNQIANG SONG, College of Computer, National University of Defense Technology, Changsha, China
GERMAN SOTELO, Universidad de los Andes Bogota D.C., Colombia
SRISHTI SRIVASTAVA, Department of Computer Science and Engineering, Mississippi State University, Mississippi State, MS
JAVID TAHERI, School of Information Technologies, University of Sydney, Sydney, Australia
CHIU C. TAN, Temple University, Philadelphia, PA
WEI-GUANG TENG, National Cheng Kung University, Tainan, Taiwan
RUPPA THULASIRAM, Department of Computer Science, University of Manitoba, Winnipeg, Manitoba, Canada
PARIMALA THULASIRAMAN, Department of Computer Science, University of Manitoba, Winnipeg, Manitoba, Canada

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YUN TIAN, Auburn University, Auburn, AL
IOANNIS E. VENETIS, Department of Computer Engineering and Informatics, University of Patras, Greece
MARIO VILLAMIZAR, Universidad de los Andes Bogota D.C., Colombia
C. SHAUN WAGNER, Missouri University of Science and Technology, Rolla, MO
LIZHE WANG, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, Beijing, China
YONGJ WANG, State Key Laboratory of Computer Science, Institute of Software, Chinese Academy of Sciences, Beijing, China
JIE WU, Temple University, Philadelphia, PA
YANHUI WU, Center for Earth Observation and Digital Earth, Chinese Academy of Sciences, Beijing, China
YINGLONG XIA, IBM T.J. Watson Research Center Yorktown Heights, NY
JIONG XIE, Auburn University, Auburn, AL
YUANYUAN YANG, Stony Brook University, Stony Brook, NY
QING YI, University of Texas at San Antonio, San Antonio, TX
QIAN ZHU, Accenture Technologies, New York, NY; Virginia Tech, Blacksburg, VA
ALBERT Y. ZOMAYA, School of Information Technologies, University of Sydney, Sydney, Australia

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