Table of Contents

Foreword ........................................................................................................................................... xv

Preface ............................................................................................................................................... xvii

Chapter 1
Generic Architecture of Complex Event Processing Systems ......................................................... 1
   Avigdor Gal, Israel Institute of Technology, Israel
   Ethan Hadar, CA Labs, Israel

Chapter 2
Event Models in Distributed Event Based Systems ........................................................................ 19
   Rolando Blanco, University of Waterloo, Canada
   Paulo Alencar, University of Waterloo, Canada

Chapter 3
Time/Space Aware Event Correlation ......................................................................................... 43
   Eiko Yoneki, University of Cambridge, UK

Chapter 4
Temporal Perspectives in Event Processing .................................................................................. 75
   Opher Etzion, IBM Haifa Research Lab, Israel

Chapter 5
Serendipity Reloaded: Fair Loading in Event-Based Messaging ................................................. 90
   Daniel Cutting, University of Sydney, Australia
   Aaron Quigley, University College Dublin, Ireland

Chapter 6
Securing Event-Based Systems ..................................................................................................... 119
   Jean Bacon, University of Cambridge, UK
   David Eyers, University of Cambridge, UK
   Jatinder Singh, University of Cambridge, UK
Chapter 7
Automating Integration Testing of Large-Scale Publish/Subscribe Systems ........................................ 140
Éric Piel, Delft University of Technology, The Netherlands
Alberto González, Delft University of Technology, The Netherlands
Hans-Gerhard Gross, Delft University of Technology, The Netherlands

Chapter 8
The PADRES Publish/Subscribe System ............................................................................................ 164
Hans-Arno Jacobsen, University of Toronto, Canada
Alex Cheung, University of Toronto, Canada
Guoli Li, University of Toronto, Canada
Balasubramaniam Maniymaran, University of Toronto, Canada
Vinod Muthusamy, University of Toronto, Canada
Reza Sherafat Kazemzadeh, University of Toronto, Canada

Chapter 9
TinyDDS: An Interoperable and Configurable Publish/Subscribe Middleware for Wireless Sensor Networks ........................................................................................................... 206
Pruet Boonma, University of Massachusetts, USA
Junichi Suzuki, University of Massachusetts, USA

Chapter 10
Knowledge-Based Networking ............................................................................................................... 232
John Keeney, Trinity College Dublin, Ireland
Dominic Jones, Trinity College Dublin, Ireland
Song Guo, Trinity College Dublin, Ireland
David Lewis, Trinity College Dublin, Ireland
Declan O’Sullivan, Trinity College Dublin, Ireland

Chapter 11
StreamMine ........................................................................................................................................ 260
Christof Fetzer, Dresden University of Technology, Germany
Andrey Brito, Dresden University of Technology, Germany
Robert Fach, Dresden University of Technology, Germany
Zbigniew Jerzak, Dresden University of Technology, Germany

Chapter 12
Event Processing in Web Service Runtime Environments .................................................................. 284
Anton Michlmayr, Vienna University of Technology, Austria
Philipp Leitner, Vienna University of Technology, Austria
Florian Rosenberg, Vienna University of Technology, Austria
Schahram Dustdar, Vienna University of Technology, Austria
Chapter 13
Event-Based Realization of Dynamic Adaptive Systems ................................................................. 307
André Appel, Clausthal University of Technology, Germany
Holger Klus, Clausthal University of Technology, Germany
Dirk Niebuhr, Clausthal University of Technology, Germany
Andreas Rausch, Clausthal University of Technology, Germany

Chapter 14
Event-Driven Mobile Computing with Objects .................................................................................. 324
Tom Van Cutsem, Vrije Universiteit Brussel, Belgium
Wolfgang De Meuter, Vrije Universiteit Brussel, Belgium

Chapter 15
Event-Based System Architecture in Mobile Ad Hoc Networks (MANETs) ......................................... 346
Guanhong Pei, Virginia Tech, USA
Binoy Ravindran, Virginia Tech, USA

Chapter 16
mTrigger: An Event-Based Framework for Location-Based Mobile Triggers ....................................... 369
Ling Liu, Georgia Institute of Technology, USA
Bhuvan Bamba, Georgia Institute of Technology, USA
Myungcheol Doo, Georgia Institute of Technology, USA
Peter Pesti, Georgia Institute of Technology, USA
Matt Weber, Georgia Institute of Technology, USA

Chapter 17
Mobile Push for Converged Mobile Services: The Airline Scenario .................................................. 394
Sasu Tarkoma, Helsinki University of Technology, Finland & Nokia NRC, Finland
Jani Heikkinen, Helsinki University of Technology, Finland
Jilles van Gurp, Nokia NRC, Finland

Chapter 18
Event-Based Interaction for Rescue and Emergency Applications in Mobile and Disruptive Environments .............................................................................................................. 411
Katrine Stemland Skjelsvik, University of Oslo, Norway
Vera Goebel, University of Oslo, Norway
Thomas Plagemann, University of Oslo, Norway
Chapter 19
Panel: Current State and Future of Event-Based Systems .......................................................... 432

Annika Hinze, University of Waikato, New Zealand
Jean Bacon, University of Cambridge, UK
Alejandro Buchmann, Technische Universität Darmstadt, Germany
Sharma Chakravarthy, The University of Texas at Arlington, USA
Mani Chandi, California Institute of Technology, USA
Avigdor Gal, Israel Institute of Technology, Israel
Dieter Gawlick, Oracle Incorporated, USA
Richard Tibbetts, StreamBase Systems, USA

Compilation of References .............................................................................................................. 455

About the Contributors ................................................................................................................... 492

Index ................................................................................................................................................... 505