

Proceedings

Fourth International Workshop on Web Site Evolution

WSE 2002



[blank page]

Proceedings

Fourth International Workshop on Web Site Evolution

WSE 2002



Montréal, Canada

2 October 2002

Sponsored by the

IEEE Computer Society Technical Committee Software Engineering



Los Alamitos, California

Washington•Brussels•Tokyo

Copyright © 2002 by The Institute of Electrical and Electronics Engineers, Inc.
All rights reserved

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries may photocopy beyond the limits of US copyright law, for private use of patrons, those articles in this volume that carry a code at the bottom of the first page, provided that the per-copy fee indicated in the code is paid through the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA01923.

Other copying, reprint, or republication requests should be addressed to: IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, P.O. Box 133, Piscataway, NJ 08855-1331.

The papers in this book comprise the proceedings of the meeting mentioned on the cover and title page. They reflect the authors' opinions and, in the interests of timely dissemination, are published as presented and without change. Their inclusion in this publication does not necessarily constitute endorsement by the editors, the IEEE Computer Society, or the Institute of Electrical and Electronics Engineers, Inc.

IEEE Computer Society Order Number PR01804
ISBN 0-7695-1804-4
Library of Congress Number 2002110957

Additional copies may be ordered from:

IEEE Computer Society
Customer Service Center
10662 Los Vaqueros Circle
P.O. Box 3014
Los Alamitos, CA 90720-1314
Tel: + 1 800 272 6657
Fax: + 1 714 821 4641
[http://computer.org/
csbooks@computer.org](http://computer.org/csbooks@computer.org)


IEEE Service Center
445 Hoes Lane
P.O. Box 1331
Piscataway, NJ 08855-1331
Tel: + 1 732 981 0060
Fax: + 1 732 981 9667
[http://shop.ieee.org/store/
customer-service@ieee.org](http://shop.ieee.org/store/customer-service@ieee.org)

IEEE Computer Society
Asia/Pacific Office
Watanabe Bldg., 1-4-2
Minami-Aoyama
Minato-ku, Tokyo 107-0062
JAPAN
Tel: + 81 3 3408 3118
Fax: + 81 3 3408 3553
tokyo.ofc@computer.org

Editorial production by Anne Jacobs

Cover art production by Joe Daigle/Studio Productions

Printed in the United States of America by Applied Digital Imaging


IEEE
COMPUTER
SOCIETY

 **IEEE**

WSE 2002

Table of Contents

Message from the General Chair	vii
Message from the Program Chairs.....	viii
Committee.....	ix
Acknowledgements.....	x

Technical Session 1: Web Services

Session chair: Peter Grogono

Laying the Foundation for Web Services over Legacy Systems	3
<i>J. Lavery, C. Boldyreff, B. Ling, and C. Allison</i>	
Migrating to Web Services—Latency and Scalability.....	13
<i>M. Litoiu</i>	
Adoption Challenges in Migrating to Web Services	21
<i>S. Tilley, J. Gerdes, T. Hamilton, S. Huang, H. Müller, and K. Wong</i>	

Technical Session 2: Static and Dynamic Analysis

Session chair: Ken Wong

Towards a Better Comprehensibility of Web Applications: Lessons Learned from Reverse Engineering Experiments.....	33
<i>G. A. Di Lucca, A. R. Fasolino, and P. Tramontana</i>	
Dynamic Model Extraction and Statistical Analysis of Web Applications.....	43
<i>P. Tonella and F. Ricca</i>	
Understanding Web Usage for Dynamic Web-Site Adaptation: A Case Study.....	53
<i>N. Niu, E. Stroulia, and M. El-Ramly</i>	

Technical Session 3: Quality

Session chair: Giuseppe Di Lucca

Evaluation, Repair, and Transformation of Web Pages for Web Content Accessibility: Review of Some Available Tools	65
<i>M. Kirchner</i>	
Virtual Bookstores Quality Evaluation: A Case Study.....	73
<i>A. B. Albuquerque and A. D. Belchior</i>	

Invited Talk

Web Site Engineering Best Practice Standards (IEEE 2001).....	81
<i>J. Isaak</i>	

Short Papers and Posters

Session chair: Timothy Lethbridge

Migrating to the Web a Legacy Application: The Sinfor Project.....85

D. Distante, V. Perrone, and M. A. Bochicchio

“Ceci n'est pas une pipe”: Observations on the Nature of Webware.....89

D. Stephens and C. Gaskell

Guidelines for Improving the Development of Web-Based Applications.....93

A. Redouane

Panel

What Are the Characteristics of Systems that Make Them Amenable to Web Services?.....97

Chair: Scott Tilley

Author Index99