

2009 11th IEEE International Symposium on Web Systems Evolution

(WSE 2009)

**Edmonton, AB, Canada
25 – 26 September 2009**



IEEE Catalog Number: CFP09WSE-PRT
ISBN: 978-1-4244-5124-1

Contents

Message from the Chairs v

Organization vii

Keynote

What Your IDE Could Do Once You Understand Your Code
Arie van Deursen 3

Session 1: Web Systems Evolution

A Service Dependency Model for Multiple Service Version Synchronization
Shuying Wang and Miriam A. M. Capretz 7

Industrial Perspectives on Architecture Level Change Impact Analysis in Web
Systems Evolution
Zafar Mehboob and Didar Zowghi 17

Web Site Evolution: Usability Evaluation Using Time Series Analysis of Selected
Episode Graphs
Kelly Storm, Eileen Kraemer, Cristina Aurrecoeche, Mark Heiges,
Cary Pennington, and Jessica C. Kissinger 27

Session 2: Web Systems Testing

Syntactic Regression Testing for Tree-Structured Output
Elizabeth Soechting, Kinga Dobolyi, and Westley Weimer 39

Improving Web Application Testing Using Testability Measures
Nadia Alshahwan, Mark Harman, Alessandro Marchetto, and Paolo Tonella 49

Ontology-based Web Service Robustness Test Generation
Luo Xu, Qiulu Yuan, Ji Wu, and Chao Liu 59

Session 3: Services and Web 2.0

Migrating a Web-Based Application to a Service-Based System – An Experience
Report
Pushparani Bhallamudi, Scott Tilley, and Arunesh Sinha 71

A New Approach for QoS-aware Web Service Composition Based on Harmony Search Algorithm	75
Nastaran Jafarpour and Mohammad Reza Khayyambashi	75
Implementing Offline Work in Web Applications for Rich Domains	79
Edgar E.M. Gonçalves and António Menezes Leitão	79
A Tool to Estimate Usability of Web 2.0 Applications	83
Ludger Martin	83
Session 4: Web Systems Design	
Consistency and scalability in event notification for embedded Web applications	89
Simon Duquennoy, Gilles Grimaud, and Jean-Jacques Vandewalle.....	89
Towards Automatic Clustering of Similar Pages in Web Applications	99
Andrea De Lucia, Michele Risi, Genoveffa Tortora, and Giuseppe Scanniello	99
Promises and Perils of Porting Software Visualization Tools to the Web	109
Marco D'Ambros, Michele Lanza, Mircea Lungu, and Romain Robbes	109
Session 5: Web Systems Analysis	
Defect location in Traditional vs. Web applications - an empirical investigation	121
Marco Torchiano, Filippo Ricca, and Alessandro Marchetto	121
Automated Performance Maintenance for Service Compositions	131
Adina Mosincat and Walter Binder	131
WAFA: Fine-grained Dynamic Analysis of Web Applications	141
Manar H. Alalfi, James R. Cordy, and Thomas R. Dean	141
Working Session	
Research Directions in Web Systems Evolution III: Migrating to the Cloud	153
Scott Tilley and Tauhida Parveen	153
Author Index	155