

2016 Seventh Latin-American Symposium on Dependable Computing (LADC 2016)

**Cali, Colombia
19-21 October 2016**



**IEEE Catalog Number: CFP16LAD-POD
ISBN: 978-1-5090-5121-2**

**Copyright © 2016 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 are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

******This publication is a representation of what appears in the IEEE Digital Libraries. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP16LAD-POD
ISBN (Print-On-Demand):	978-1-5090-5121-2
ISBN (Online):	978-1-5090-5120-5

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

2016 Seventh Latin-American Symposium on Dependable Computing

LADC 2016

Table of Contents

Message from the LADC 2016 General Chairs.....	viii
Message from the LADC 2016 Program Committee Chairs.....	x
Message from the WDES 2016 Workshop Chairs.....	xi
LADC 2016 Organizing Committee.....	xiii
LADC 2016 Program Committee.....	xiv
LADC 2016 Steering Committee.....	xvi
WDES 2016 Workshop Committee.....	xvii

Session: Invited Papers

Reconfigurable Scalable State Machine Replication	1
<i>Davi Da Silva Böger, Joni Da Silva Fraga, and Eduardo Alchieri</i>	
A Methodology for Prevention of Biometric Presentation Attacks	9
<i>Emanuela Marasco, Mohamed Shehab, and Bojan Cukic</i>	

Session: Regular Papers

Running Resilient MPI Applications on a Dynamic Group of Recommended Processes	15
<i>Edson Tavares De Camargo and Elias P. Duarte Jr.</i>	
Soundness Proof of EventB2Java	25
<i>Néstor Cataño and Shigeo Nishi</i>	
A Software Fault Injector to Validate Implementations of a Safety Communication Protocol	35
<i>Rodrigo J. Dobler, Sergio Cechin, Taisy Weber, and João Netto</i>	
Usability Assessment in a Multi-Biometric Continuous Authentication System	43
<i>Enrico Schiavone, Andrea Ceccarelli, Andrea Bondavalli, and Ariadne M.B.R. Carvalho</i>	
Speeding-Up Simulation-Based Fault Injection of Complex HDL Models	51
<i>Ilya Tuzov, Juan-Carlos Ruiz, David De Andrés, and Pedro Gil</i>	
Implementing a Flexible Failure Detector That Expresses the Confidence in the System	61
<i>Anubis G. De M. Rossetto, Cláudio F.R. Geyer, Luciana Arantes, and Pierre Sens</i>	

BuzzPSS: A Dependable and Adaptive Peer Sampling Service	71
<i>Nuno Machado, Francisco Maia, Miguel Matos, and Rui Oliveira</i>	
Two Convergence Problems for Robots on Graphs	81
<i>Armando Castañeda, Sergio Rajsbaum, and Matthieu Roy</i>	
An Autonomic Hierarchical Reliable Broadcast Protocol for Asynchronous Distributed Systems with Failure Detector	91
<i>Denis Jeanneau, Luiz A. Rodrigues, Luciana Arantes, and Elias P. Duarte Jr.</i>	
Analyzing the Impact of Failures in the Electric Power Distribution Grid	99
<i>Silvano Chiaradonna, Felicita Di Giandomenico, and Giulio Masetti</i>	
Towards Model-Driven Virtual Patching for Web Applications	109
<i>Gustavo Betarte, Rodrigo De La Fuente, Rodrigo Martínez, Juan Pérez, and Felipe Zipitúa</i>	

Session: Short Papers

Towards Understanding the Value of False Positives in Static Code Analysis	119
<i>Carlo Dimastrogiovanni and Nuno Laranjeiro</i>	
Semi-Automatic Checklist Quality Assessment of Natural Language Requirements for Space Applications	123
<i>Anderson Rossanez and Ariadne M.B.R. Carvalho</i>	
Evolving from Dependability to Resilience Benchmarks: Issues and Possibilities	127
<i>Raquel Almeida and Henrique Madeira</i>	
Modeling Dependable Product-Families: From Use Cases to State Machine Models	131
<i>Leydi Erazo, Eliane Martins, and Juliana Galvani Greggi</i>	
Using Failure Prediction to Improve FPGA Scrubbing	135
<i>José Luís Nunes, João Carlos Cunha, and Mário Zenha-Rela</i>	

Session: Practical Experience Report

Testing Web Applications Using Poor Quality Data	139
<i>Nuno Laranjeiro, Seyma Nur Soydemir, and Jorge Bernardino</i>	
Bypassing IOMMU Protection against I/O Attacks	145
<i>Benoît Morgan, Éric Alata, Vincent Nicomette, and Mohamed Kaâniche</i>	
Experimenting Machine Learning Techniques to Predict Vulnerabilities	151
<i>Henrique Alves, Balduino Fonseca, and Nuno Antunes</i>	

WDES 2016: Workshop on Dependability in Evolving Systems

Dependability Verification of Nanosatellite Embedded Software Supported by a Reusable Test System	157
<i>Carlos A.P.L. Conceicao, Fátima Mattiello-Francisco, and Carlos L.G. Batista</i>	
Challenges on Anonymity, Privacy, and Big Data	164
<i>Tania Basso, Roberta Matsunaga, Regina Moraes, and Nuno Antunes</i>	
Benchmarking User-Defined Security Configuration of Mobile Devices	172
<i>Daniel Vecchiato and Eliane Martins</i>	

An Approach for Verification of a Satellite Simulator - An Evolving System	176
<i>Paulo Diego Barbosa Da Silva, Ana Maria Ambrosio, Emilia Villani, and Denise Rotondi Azevedo</i>	
A Methodology for Proactive Maintenance of Uninterruptible Power Supplies	183
<i>Slobodan Lukovic, Igor Kaitovic, Gerardo Lecuona, and Mirosław Malek</i>	
An Approach to Evaluation of Converged Networks Integrating Communication and Power Infrastructures	187
<i>Almir P. Guimares, Igor Rocha, Paulo R. Maciel, and Rivalino Matias Jr.</i>	
Author Index	194