2012 ARCS Workshops

Munich, Germany
28-29 February 2012
Table of Contents

1st International Workshop on Complex Sciences in the Engineering of Computing Systems

Aimee Gotway Bailey, Quan Minh Bui, J. Doyne Farmer, Robert M. Margolis, Ramamoorthy Ramesh
Forecasting Technological Innovation

Shota Ishikawa, Yutaka Arakawa, Shigeaki Tagashira, Akira Fukuda
Hot Topic Detection in Local Areas Using Twitter and Wikipedia

Marcelo Serrano Zanetti, Frank Schweitzer
A Network Perspective on Software Modularity

Workshop on Dependability and Fault Tolerance

Horst Schirmeier, Martin Hoffmann, Rüdiger Kapitza, Daniel Lohmann, Olaf Spinczyk
Fail*: Towards a Versatile Fault Injection Experiment Framework

David Neuhäuser, Eberhard Zehendner
Correction of Faulty Signal Transmission for Resilient Designs of Signed-Digit Arithmetic

Raphael Maas, Erik Maehle
Fault Tolerant and Adaptive Path Planning in Crowded Environments for Mobile Robots Based on Hazard Estimation via Health Signals

Karl-Erwin Großpietsch, Tanya A. Silayeva
ART Networks as Flexible Means to Implement Dependability Properties in Autonomous Systems

Raimar Lill, Francesca Saglietti
Model-based Testing of Autonomous Systems based on Coloured Petri Nets

Sebastian Müller, Mario Schölzel, Heinrich Theodor Vierhaus
Hierarchical Self-repair in Heterogeneous Multi-core Systems by Means of a Software-based Reconfiguration

Holm Rauchfuss, Thomas Wild, Andreas Herkersdorf
Enhanced Reliability in Tiled Manycore Architectures through Transparent Task Relocation

Dennis Obermann, Josef Börcsök
Two-Way-Compiler: Additional Data Saving for Generating the Original Source Code of a Binary Program

Fevzi Belli
Verlässlichkeit bei Wiederverwendung von IT-Komponenten – zum Stand der Normungsaktivitäten
Tutorial on Reconfigurable Systems

Dirk Koch, Jim Torresen, Christian Beckhoff, Daniel Ziener, Christopher Dennl, Volker Breuer, Jürgen Teich, Michael Feilen, Walter Stechele 70
Partial Reconfiguration on FPGAs in Practice - Tools and Applications

3rd Workshop on Parallel Programming and Run-Time Management Techniques for Many-core Architectures

Ioannis Koutras, Alexandros Bartzas, Dimitrios Soudris 82
Efficient Memory Allocations on a Many-Core Accelerator.

Lazaros Papadopoulos, Alexandros Bartzas, Dimitrios Soudris 88
Run-Time Dynamic Data Type Transformations

Giovanni Mariani, Gianluca Palermo, Vittorio Zaccaria, Cristina Silvano 95

Giovanni Agosta, Alessandro Barenghi, Gerardo Pelosi 101
Exploiting Bit-level Parallelism in GPGPUs: a Case Study on KeeLoq Exhaustive Search Attacks

Peter van Stralen, Andy Pimentel 108
Fast Scenario-Based Design Space Exploration using Feature Selection

Georgia Psychou, Robert Fasthuber, Jos Hulzink, Jos Huisken, Francky Catthoor 115
Sub-word Handling in Data-parallel Mapping

Melhem Tawk, Khaled Z. Ibrahim, Smail Niar 122
Concurrent Phase Classification for Accelerating MPSoC Simulation

10th Workshop on Parallel Systems and Algorithms

David Neuhäuser, Eberhard Zehendner 129
Resilient data encoding for fault-prone signal transmission in parallelized signed-digit based arithmetic

Peter Sohe 135
Parallel coding for storage systems – An OpenMP and OpenCL capable framework

Steffen Schiele, Holger Blaar, Detlef Thürkow, Markus Möller, Matthias Müller-Hanneman 141
Parallelization Strategies to Speed-Up Computations for Terrain Analysis on Multi-Core Processors
Dominik Schoenwetter, Max Schneider, Dietmar Fey  147
A Speed-Up Study for a Parallelized White Light Interferometry
Preprocessing Algorithm on a Virtual Embedded Multiprocessor System

Marcus Hilbrich, Ralph Müller-Pfefferkorn  153
Achieving scalability for job centric monitoring in a distributed infrastructure

Deepak Ajwani, Andreas Beckmann, Ulrich Meyer, David Veith  160
I/O-efficient approximation of graph diameters by parallel cluster growing –
a first experimental study

Christian Riess, Volker Strehl, Rolf Wanka  167
The Spectral Relation between the Cube-Connected Cycles and the
Shuffle-Exchange Network

Christoph W. Kessler, Erik Hansson  173
Flexible Scheduling and Thread Allocation for Synchronous Parallel Tasks