

# **2010 8th IEEE Workshop on Embedded Systems for Real-Time Multimedia**

**(ESTIMedia 2010)**

**Scottsdale, Arizona, USA  
28 – 29 October 2010**



**IEEE Catalog Number: CFP10STI-PRT  
ISBN: 978-1-4244-9084-4**

# TABLE OF CONTENTS

## **SPECIAL SESSION A: KEYNOTE 1**

### **Adoptability as a Key Success Factor for Media Architectures**

*Nat Seshan,*

## **SPECIAL SESSION B: KEYNOTE 2**

### **Real-time Multimedia with C Compiler for Hardware**

*Kazutoshi Wakabayashi*

## **REGULAR SESSION 1: SOFTWARE OPTIMIZATION TECHNIQUES**

<b>Operating System Runtime Management of Partially Dynamically Reconfigurable Embedded Systems .....</b>	<b>1</b>
<i>M. D. Santambrogio, V. Rana, I. Beretta, D. Sciuto</i>	
<b>A New Method for Minimizing Buffer Sizes for Cyclo-Static Dataflow Graphs .....</b>	<b>11</b>
<i>Mohamed Benazouz, Olivier Marchetti, Alix Munier-Kordon, Thierry Michel</i>	
<b>Translating Affine Nested-loop Programs with Dynamic Loop Bounds Into Polyhedral Process Networks.....</b>	<b>21</b>
<i>Dmitry Nadezhkin, Hristo Nikolov, Todor Stefanov</i>	
<b>Value-Based Scheduling of Distributed Fault-Tolerant Real-Time Systems with Soft and Hard Timing Constraints.....</b>	<b>31</b>
<i>Viacheslav Izosimov, Petru Eles, Zebo Peng</i>	

## **REGULAR SESSION 2: MULTIPROCESSORS AND ARCHITECTURE**

<b>NASA: A Generic Infrastructure for System-level MP-SoC Design Space Exploration .....</b>	<b>41</b>
<i>Zai Jian Jia, Andy D. Pimentel, Mark Thompson, Tomás Bautista, Antonio Núñez</i>	
<b>Conservative Application-Level Performance Analysis through Simulation of MPSoCs .....</b>	<b>51</b>
<i>Andrew Nelson, Andreas Hansson, Henk Corporaal, Kees Goossens</i>	
<b>Task-level Timed-functional Simulation for Multi-core Embedded Systems .....</b>	<b>61</b>
<i>EunJin Jeong, Hae-woo Park, Soonhoi Ha, Hyunok Oh</i>	

## **REGULAR SESSION 3: POWER AND PERFORMANCE OPTIMIZATION**

<b>A Scalable Performance Prediction Heuristic for Implementation Planning on Heterogeneous Systems .....</b>	<b>71</b>
<i>John R. Wernsing, Greg Stitt</i>	
<b>Reducing Disk Power Consumption in Portable Media Players.....</b>	<b>81</b>
<i>Minseok Song, Wanhyung Ryu, Jeong Seop Sim</i>	
<b>Process Variation Aware Transcoding for Low Power H.264 Decoding.....</b>	<b>90</b>
<i>Kiarash Amiri, Amin Khajeh, Ahmed M. Eltawil, Fadi J. Kurdahi</i>	

## **REGULAR SESSION 4: APPLICATIONS AND DESIGN METHODOLOGIES**

<b>Combining Process Splitting and Merging Transformations for Polyhedral Process Networks .....</b>	<b>97</b>
<i>Sjoerd Meijer, Hristo Nikolov, Todor Stefanov</i>	
<b>A Reconfigurable Computing Platform for JPEG 2000 and H.264 SHD Video Coding .....</b>	<b>107</b>
<i>Giuseppe Baruffa, Federico Fiorucci, Fabrizio Frescura, Paolo Micanti, Ludovico Verducci, Barbara Villarini</i>	
<b>Two-stage Configurable Decoder Model for Multiple Forward Error Correction Standards .....</b>	<b>114</b>
<i>Itetsu Taniguchi, Ayataka Kobayashi, Keishi Sakanushi, Yoshinori Takeuchi, Masaharu Imai</i>	
<b>Improving Transient Memory Fault Resilience of an H.264 Decoder.....</b>	<b>121</b>
<i>Andreas Heinig, Michael Engel, Florian Schmoll, Peter Marwedel</i>	
<b>Author Index</b>	