

# **2013 IEEE 21st Annual Symposium on High-Performance Interconnects**

## **(HOTI 2013)**

**San Jose, California, USA  
21-23 August 2013**



**IEEE Catalog Number:** CFP13HIS-POD  
**ISBN:** 978-1-4799-1366-4

# **2013 IEEE 21st Annual Symposium on High-Performance Interconnects**

## **HOTI 2013**

### **Table of Contents**

<b>Message from the General Chairs .....</b>	vii
<b>Message from the Technical Program Chairs .....</b>	ix
<b>Committee Members.....</b>	xi
<b>Technical Program Committee.....</b>	xiii
<b>List of Reviewers.....</b>	xiv
<b>Keynote Abstracts.....</b>	xv
<b>Invited Talks.....</b>	xx
<b>Industrial Panel.....</b>	xxii
<b>Tutorials.....</b>	xxiii

---

### **Session I: On-chip Communications**

Deterministic Multiplexing of NoC on Grid CMPs .....	1
<i>John Carpenter and Rami Melhem</i>	
Minimizing Delay in Shared Pipelines .....	9
<i>Ori Rottenstreich, Isaac Keslassy, Yoram Revah, and Aviran Kadosh</i>	
Heterogeneous Multi-processor Coherent Interconnect .....	17
<i>Kai Chirca, Matthew Pierson, Joe Zbiciak, David Thompson, Daniel Wu, Shankar Myilswamy, Roger Griesmer, Kedar Basavaraj, Thomas Huynh, Akshit Dayal, Junbok You, Pat Eyres, Yusuf Ghadiali, Todd Beck, Anthony Hill, Naveen Bhoria, Duc Bui, Jonathan Tran, Mujibur Rahman, Hong Fei, Shoban Jagathesan, and Tim Anderson</i>	

### **Session II: TCP/IP**

TCP Pacing in Data Center Networks .....	25
<i>Monia Ghobadi and Yashar Ganjali</i>	

Clustered Linked List Forest for IPv6 Lookup .....	33
<i>Oğuzhan Erdem and Aydin Carus</i>	
HybridCuts: A Scheme Combining Decomposition and Cutting for Packet Classification .....	41
<i>Wenjun Li and Xianfeng Li</i>	

## **Session III: OpenFlow and High-Performance Computing**

Efficient Implementation of Security Applications in OpenFlow Controller with FleXam .....	49
<i>Sajad Shirali-Shahreza and Yashar Ganjali</i>	
OFAR-CM: Efficient Dragonfly Networks with Simple Congestion Management .....	55
<i>Marina García, Enrique Vallejo, Ramón Beivide, Mateo Valero, and Germán Rodríguez</i>	
Designing Optimized MPI Broadcast and Allreduce for Many Integrated Core (MIC) InfiniBand Clusters .....	63
<i>K. Kandalla, A. Venkatesh, K. Hamidouche, S. Potluri, D. Bureddy, and D.K. Panda</i>	

## **Session IV: Short Papers**

On the Data Path Performance of Leaf-Spine Datacenter Fabrics .....	71
<i>Mohammad Alizadeh and Tom Edsall</i>	
Can Parallel Replication Benefit Hadoop Distributed File System for High Performance Interconnects? .....	75
<i>Nusrat S. Islam, Xiaoyi Lu, Md. Wasi-ur-Rahman, and Dhabaleswar K. (DK) Panda</i>	
Interconnection Network for Tightly Coupled Accelerators Architecture .....	79
<i>Toshihiro Hanawa, Yuetsu Kodama, Taisuke Boku, and Mitsuhsisa Sato</i>	
Low Latency Scheduling Algorithm for Shared Memory Communications over Optical Networks .....	83
<i>Muhammad Ridwan Madarbux, Anouk Van Laer, and Philip M. Watts</i>	
Bursting Data between Data Centers: Case for Transport SDN .....	87
<i>Abhinava Sadasivarao, Sharfuddin Syed, Ping Pan, Chris Liou, Inder Monga, Chin Guok, and Andrew Lake</i>	
<b>Author Index .....</b>	<b>91</b>