



A Symposium on  
High Performance Interconnects

August 26-28, 2008  
Stanford, California USA



Thank you to our sponsors

Gold Patron



i n v e n t

Silver Patron

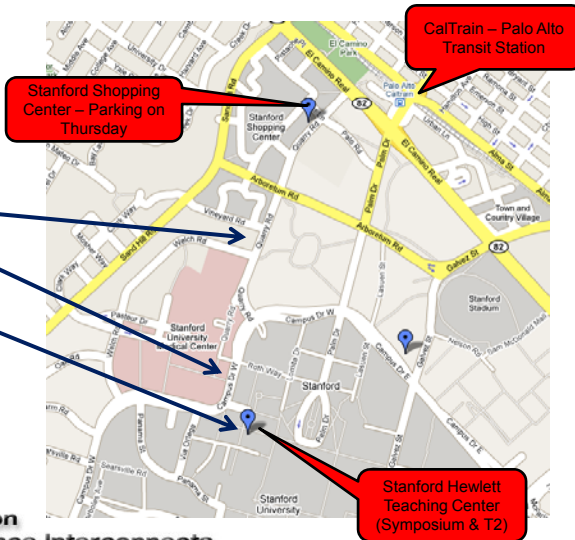
**Warthman  
Associates**  
Technical Writers  
[www.warthman.com](http://www.warthman.com)



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# Hotl Event Parking - Thursday

- Arrive Early
  - We start at 8:15am
- Walk South
  - Along Quarry Rd.
  - To Campus Drive
  - To Serra Mall
- Consider
  - CalTrain



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**INTERCONNECTS**

# Marguerite Shuttle – Thursday AM (A-Line, shown in Orange)

- CalTrain-Palo Alto Transit Station
    - 6:45am
    - 7:09am
    - 7:27am
  - Stanford Shopping Center
    - 6:48am
    - 7:12am
    - 7:30am
  - Via Ortega & Serra Mall
- A-Line - Towards Main Campus



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**INTERCONNECTS**

# Internet and Web

- Wireless
  - Login
    - Hoti
  - password:
    - 2008conf
- Website
  - <http://www.Hoti.org/>



# The 2008 Committee

- General Chair
  - John W. Lockwood
- Technical Program Chairs
  - Ron Brightwell
  - Fabrizio Petrini
- Industrial Session Chairs
  - Dennis Abts
  - Keren Bergman
- Tutorial Chair
  - Christos Koliás
- Publication Chair
  - Luca Valcarenghi
- Finance & Local Arrangements Chair
  - Liz Rogers
- Publicity Chairs
  - Weikuan Yu
- Panel Moderators
  - Daniel Pitt
  - Head Bubba
- Registration Chair
  - Songkrant Muneenaem
- Webmaster
  - Liz Rogers
- Steering Committee
  - John W. Lockwood (chair)
  - Daniel Pitt
  - Allen J. Baum
  - Lily Jow
  - Mark Laubach



## Conference Chairs



- John W. Lockwood  
– General Chair



- Ron Brightwell  
– Program Co-Chair



- Fabrizio Petrini  
– Program Co-Chair



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## Industrial Session Chairs



- Dennis Abts



- Keren Bergman



- Luca Carloni  
– Industry Session Chair



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## Organizing Committee



- Liz Rogers
  - Webmaster
  - Local arrangements
  - Finance



- Songkrant Muneenaem
  - Registration Chair



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## Organizing Committee



- Christos Koliass
  - Tutorial Chair



- Luca Valcarenghi
  - Publication Chair

- Weikuan Yu
  - Publicity Chair



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## Panel Chairs



Dan Pitt



Head Bubba



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## Steering Committee



Allen J. Baum



Mark Laubach

- Lily Jow  
– (not shown)



John W.  
Lockwood



Daniel Pitt



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# Volunteers



• Dick Karpinski

• Fred Zeise



• John Delaney

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# 2008 Program Committee

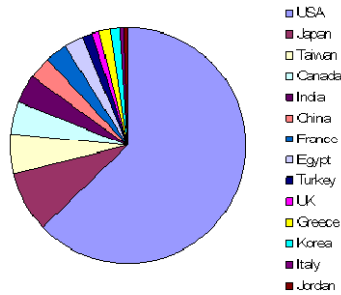
- Dennis Abts
  - Google
- Pavan Balaji
  - Argonne National Lab
- Keren Bergman
  - Columbia University
- Andrea Bianco
  - Politecnico di Torino
- Ron Brightwell (Program Co-Chair)
  - Sandia National Laboratories
- Head Bubba
  - Credit Suisse
- Piero Castoldi
  - Scuola Superiore Sant'Anna
- Sarang Dharmapurikar
  - Nuova Systems
- Hans Eberle
  - Sun Microsystems Laboratories
- Wu-chun Feng
  - Virginia Tech
- Juan Fernandez
  - University of Murcia
- Ada Gavrilovska
  - Georgia Inst. of Technology
- Paolo Giaccione
  - Politecnico di Torino
- Mitchell Gusat
  - IBM Zurich Research Laboratory
- Ron Ho
  - Sun Microsystems Laboratories
- Doan Hoang,
  - University of Technology, Sydney
- Isaac Keslassy
  - Technion
- John Kim
  - Northwestern University
- Venkata Krishnan
  - Dolphin Interconnect Solns.
- Tal Lavian
  - University of California, Berkeley
- Bill Lin
  - University of California, San Diego
- John Lockwood
  - Stanford University
- Rami Melhem
  - University of Pittsburgh
- Cyriel Minkenber
  - IBM Zurich Research Lab
- Fabrizio Petrini (Program CoChair)
  - IBM, T.J. Watson Research
- Gregory Pfister
  - IBM
- Craig Stunkel
  - IBM, T.J. Watson Research
- Brian Towles
  - D. E. Shaw
- Keith Underwood
  - Intel
- Anujan Varma
  - University of California, Santa Cruz
- Zuoguo (Joe) Wu
  - Intel

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## 2008 Paper Statistics

- 42% increase in submissions over 2007
- 2.8x increase in submissions over 2006

Submitted Authors by Country



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## Presenter Affiliations

- Hewlett Packard Laboratories
- Princeton University,
- Oregon State University,
- The University of Texas at Austin,
- MIT,
- UC Berkeley,
- Politecnico di Torino,
- Columbia University,
- Sun Microsystems,
- University of California, San Diego
- University of California, Davis,
- FORTH,
- NEC,
- The Ohio State University,
- University of Pittsburgh,
- University of Texas at Dallas,
- Institute of Computing Technology Chinese Academy of Science,
- Sicortex,
- Quadrics,
- Myricom, USA);
- Indiana University



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## 2008 Paper Reviews

- 3-4 reviews for each paper
- Average reviews per paper was 3.4
- PC conference call for final selection
- 19 accepted
  - 14 regular research papers
  - 5 industry research papers



## Technical Sessions

- Authors:
  - Meet with session chair 15 minutes before session
    - Have presentation ready to go
- Presentation slides
  - Please upload PowerPoint slides to:
    - <http://www.gradebot.com/hot i /authors/>
- Full articles
  - Printed in IEEE proceedings
  - Available on USB Stick



## Tutorials for Tuesday, Aug 26, 2008

- **T1: OpenFlow**
  - Brandon Heller, Guido Appenzeller, Nick McKeown (Stanford University)
- **T2: Designing HPC Clusters and Enterprise Datacenters: The InfiniBand and 10GE Way**
  - Dhableswar (DK) Panda (University of Chicago), Dr. Pavan Balaji, (Argonne National Laboratory)



## Session 1 : On-Chip Interconnects

*Session Chair : Fabrizio Petrini*

- **A High-Speed Optical Multi-drop Bus for Computer Interconnections**
  - Michael Tan; Paul Rosenberg; Jong-Souk Yeo; Moray McLaren; Terrel Morris
- **NoC with Near-Ideal Express Virtual Channels Using Global-Line Communication**
  - Tushar Krishna; Amit Kumar; Patrick Chiang; Mattan Erez; Li-Shiuan Peh
- **Building manycore processor-to-DRAM networks with monolithic silicon photonics**
  - Christopher Batten; Ajay Joshi; Jason Orcutt; Anatoly Khilo; Benjamin Moss; Charles Holzwarth; Milos Popovic; Hanqing Li; Henry Smith; Judy Hoyt; Franz Kärtner; Rajeev Ram; Vladimir Stojanovic; Krste Asanovic
- **Design Exploration of Optical Interconnection Networks for Chip Multiprocessors**
  - Michele Petracca; Benjamin Lee; Keren Bergmam; Luca Carloni



## Session 2: Memory Subsystem Interconnects

*Session Chair : Luca Carloni*

- **Coherency Hub Design for Multi-Node Victoria Falls Server Systems**
  - John Feehrer; Paul Rotker; Paul Gingras; Peter Yakutis; Milton Shih
- **Low Power Passive Equalizer Design for Computer Memory Links**
  - Ling Zhang; Wenjian Yu; Yulei Zhang; Renshen Wang; Alina Deutsch; George Katopis; Daniel Dreps; James Buckwalter; Earnest Kuh; Chung-Kuan Cheng
- **OCDIMM:Scaling the DRAM Memory Wall Using WDM based Optical Interconnects**
  - AMIT HADKE; Tony Benavides; Venkatesh Akella; Rajeevan Amirtharajah; Ben Yoo



## Session 3: Routing and Performance Evaluation

*Session Chair : Ron Brightwell*

- **Backlog-Aware Crossbar Schedulers: A New Algorithm and its Efficient Hardware Implementation**
  - Giorgos Dimitrakopoulos; Nikolaos Chrysos
- **High-speed, Short-latency Multipath Ethernet Transport for Interconnections**
  - Nobuyuki Enomoto; Hideyuki Shimonishi; Junichi Higuchi; Takashi Yoshikawa; Atsushi Iwata
- **Performance Analysis and Evaluation of PCIe 2.0 and Quad-Data Rate InfiniBand**
  - Matthew Koop; Wei Huang; Karthik Gopalakrishnan; Dhableswar Panda
- **Evaluation of an Integrated PCI Express IO Expansion and Clustering Fabric**
  - Venkata Krishnan



## Session 4: Network Processing

*Session Chair : John Lockwood*

- **An Efficient Hardware-based Multi-hash Scheme for High Speed IP Lookup**
  - Socrates Demetriades; Michel Hanna; Sangyeun Cho; Rami Melhem
- **Constraint Repetition Inspection for Regular Expression on FPGA**
  - *Miad Faezipour; Mehrdad Nourani*
- **Network processing on SPE core in Cell Broadband**
  - *Yuji Kawamura; Takeshi Yamazaki; Hiroshi Kyusojin; Tatsuya Ishiwata; Kazuyoshi Horie*



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## Session 5: Industry Papers I

*Session Chair : Dennis Abts*

- **Telecentric Optics for Free-Space Optical Link**
  - Huei Pei Kuo; Michael Tan
- **A Network Fabric for Scalable Multiprocessor Systems**
  - Matthew Reilly
- **HPP Switch: A Novel High Performance Switch for HPC**
  - Dawei Wang



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## Session 6: Industry Papers II

*Session Chair : Dennis Abts*

- **QsNetIII an Adaptively Routed Network for High Performance Computing**
  - Duncan Roweth; Trevor Jones
- **Adaptive Routing Strategies for Modern High Performance Networks**
  - Patrick Geoffray; Torsten Hoefler



## Author / Press / Attendee Info.

- **Authors:**
  - Please upload PowerPoint slides to:  
<http://www.gradebot.com/hoti/authors/>
- **Press:**
  - Can meet with authors immediately after session
- **Attendees:**
  - Full papers appear in printed IEEE proceedings
  - Electronic copies of papers included on USB Stick



# Hot-I Memorabilia

- Luggage Tag: Free when you turn in Survey !
- Hot-Tote bag in white \$5
- Hot-Shoulder bag in black \$10
- HotI Jumbo Coffee Mug \$10
- HotI-14th-2006 Proceedings \$20
- HotI-15th-2007 Proceedings \$25



Orders can be placed on the registration with a credit card or purchased with a check at the front desk.



# We want your feedback

- Please complete the survey that was included with your conference packet
- Your feedback on the conference is greatly appreciated

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**Conference Evaluation**

**1. Publicity**  
I found out about Hot-Inter from (check all that apply) (circle your answer)  
 Hot-Inter from an e-mail  
 Read from a web site  
 Paper presented in talks or on web  
 I read from the past (check all that apply)  
 Facebook Ad  
 Facebook Calendar  
 Hot-Inter Calendar  
 Hot-Inter Website  
 IEEE Computer Magazine  
 Hot-Inter  
 Other (Please specify, e.g.: memo/announcement) \_\_\_\_\_

**2. Registration**  
I thought advance program and registration materials arrived \_\_\_\_\_ too early \_\_\_\_\_ on time \_\_\_\_\_ too late (need to know by) \_\_\_\_\_  
 I was allowed to interconnect: never before, last year, at \_\_\_\_\_ times before (specify) \_\_\_\_\_

**3. Food**  
On a scale of 1 (poor) to 10 (fantastic), the food is: (write NA if you didn't eat)  
 \_\_\_\_\_ breakfast \_\_\_\_\_ lunches \_\_\_\_\_ dinner \_\_\_\_\_  
 Drinks could use more \_\_\_\_\_ Lunches could use more \_\_\_\_\_ Dinner could use more \_\_\_\_\_

**4. Program**  
Please check how below for your favorite session(s), as well as your favorite overall presentation(s)

| Workshop                      | Session | Paper 1 | Paper 2 | Paper 3 |
|-------------------------------|---------|---------|---------|---------|
| Session 1: Do-Only Networking |         |         |         |         |
| Session 2: Q&A: Hot-Inter     |         |         |         |         |
| Session 3: Booth Architecture |         |         |         |         |
| Session 4: Network Security   |         |         |         |         |
| Session 5: Hot-Inter          |         |         |         |         |
| Session 6: Hot-Inter          |         |         |         |         |
| Session 7: Hot-Inter          |         |         |         |         |
| Session 8: Hot-Inter          |         |         |         |         |
| Session 9: Hot-Inter          |         |         |         |         |
| Session 10: Hot-Inter         |         |         |         |         |
| Session 11: Hot-Inter         |         |         |         |         |
| Session 12: Hot-Inter         |         |         |         |         |
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| Session 48: Hot-Inter         |         |         |         |         |
| Session 49: Hot-Inter         |         |         |         |         |
| Session 50: Hot-Inter         |         |         |         |         |



# 2008 Hot Interconnects

- Thank you for a GREAT conference!
- See you next year in 2009



# Participate in 2009

- Volunteer
  - Organizing Committee
  - Program Committee
- Sponsor
  - Silver / Gold / Platinum / Americium
- Submit a nomination
  - Form is included with your conference packet
  - Submit to front desk
  - Discuss with Chairs

The form is titled "HOT INTERCONNECTS Volunteer Nomination". It begins with the question "Hot Interconnects is looking for new people to assist with the conference. Are you willing to help? Would you like to nominate someone to serve? If so, please complete this form and submit it to the front desk." The form includes fields for "Name" (with a sub-question "Is this yourself or are you nominating someone else?"), "Email", "Employer", and "Title/Position". It then asks "What roles could you assist with?" and provides a list of options: "Technical Program (paper review)", "Publication / Printing", "Publicity / Advertising", "Finance / Accounting", "Registration", "Tutorials (managing or)", "Local Arrangements", and "Other (specify)". The form also includes questions about "What skills or experience do you have that Qualifies you to perform this activity or tasks?", "How many times have you attended Hot Interconnects?", "If applicable, How many times have you presented at a HotI?", "If applicable, How close do you live to Palo Alto (miles or km)?", and "How much time can you afford to spend working on this conference? (hours/week, weeks)". The form concludes with the text "Thank you offering to help. We will contact you if needed to help with HotI 2009!"

## Call for Papers : HotI-17

- *Full papers due*
  - *March 2009*
- *Next year in New York City*
  - *August 2009*
- *Details on Website*
  - <http://www.hoti.org/>

