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notices



→ Proceedings of the 1999 ACM SIGPLAN
Conference on Programming
Languages Design and Implementation (PLDI)

FCRC '99



Proceedings
of the
ACM
SIGPLAN '99 Conference on
Programming Language
Design and Implementation[®]
(PLDI)



Atlanta, Georgia
1-4 May 1999

Sponsored by the
ACM Special Interest Group on Programming
Languages
(ACM SIGPLAN)

ACM SIGPLAN '99 Conference on
Programming Language Design and Implementation
Atlanta, Georgia, May 2-4, 1999

Sunday, 2 May 1999

8:30am - 9:30am Session I

Chair: Brad Calder

<i>Cache-Conscious Structure Layout</i>	1
Trishul M. Chilimbi (University of Wisconsin), Mark D. Hill (University of Wisconsin) and James R. Larus (Microsoft Research)	
<i>Cache-Conscious Structure Definition</i>	13
Trishul M. Chilimbi (University of Wisconsin), Bob Davidson (Microsoft Research), and James R. Larus (Microsoft Research)	

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2:00pm - 3:30pm Session III

Chair: Harini Srinivasan

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Radu Rugina and Martin Rinard (Massachusetts Institute of Technology)	
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Suan Hsi Yong, Susan Horwitz, and Thomas Reps (University of Wisconsin)	

4:00pm - 5:00pm Session IV

Chair: Zhong Shao

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<i>Support for Garbage Collection at Every Instruction in a Java Compiler</i>	118
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5:00pm - 5:30pm SIGPLAN Open Meeting

6:00pm - 7:30pm Student Poster Session

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Chair: Rebecca Parsons

- Storage Assignment Optimizations to Generate Compact and Efficient Code on Embedded DSPs* 128
Amit Rao (Synopsis, Inc.) and Santosh Pande (University of Cincinnati)
- Enhanced Code Compression for Embedded RISC Processors* 139
Keith D. Cooper (Rice University) and Nathaniel McIntosh (Hewlett-Packard Corporation)

9:50am - 11:20am Session VI

Chair: David Wall

- Using Node Merging to Enhance Graph Coloring* 150
Steven R. Vegdahl (University of Portland)
- Control CPR: A Branch Height Reduction Optimization for EPIC Architectures* 155
Michael Schlansker (Hewlett-Packard Laboratories), Scott Mahlke (Hewlett-Packard Laboratories), and Richard Johnson (Transmeta Corp.)
- A Fast Fourier Transform Compiler* 169
Matteo Frigo (Massachusetts Institute of Technology)

2:00pm - 3:30pm Session VII

Chair: Kath Knobe

- A New Framework for Debugging Globally Optimized Code* 181
Le-Chun Wu (University of Illinois), Rajiv Mirani (Hewlett-Packard Company), Harish Patil (Compaq Computer Corporation), Bruce Olsen (Hewlett-Packard Company), and Wen-mei W. Hwu (University of Illinois)
- A Theory of Type Qualifiers* 192
Jeffrey S. Foster, Manuel Fähndrich, and Alexander Aiken (University of California, Berkeley)
- Static Single Assignment Form for Machine Code* 204
Allen Leung (New York University) and Lal George (Bell Labs)

4:00pm - 5:00pm Session VIII

Chair: Michael Burke

- Industrial Panel: Trends in the Future of Industrial Computing*
Jim Rhyne (IBM Corporation), Steven Lucco (Microsoft), Edward Felten (Princeton University), Guy L. Steele, Jr. (Sun Microsystems), Joe Paradiso (MIT Media Lab)

5:00pm - 5:30pm Program Committee Chair's Report

8:00pm - 10:30pm Reception and ACM SIGPLAN Awards Ceremony

Tuesday, 4 May 1999

8:30am - 9:30am Session IX

Chair: Chau-Wen Tseng

- New Tiling Techniques to Improve Cache Temporal Locality* 215
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<i>Improving Cache Performance of Dynamic Applications through Data and Computation</i>	
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Chen Ding and Ken Kennedy (Rice University)	

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Brian Grant, Matthai Philipose, Markus Mock, Craig Chambers, and Susan J. Eggers (University of Washington)	

4:00pm - 4:15pm PLDI'99 Awards Ceremony

Presentation of PLDI'99 Best Presentation and Most Innovative Paper Awards, selected by onsite voting by registrants

4:15pm - 6:00pm National Compiler Infrastructure Progress Report

Other Conference-related Activities

PLDI Tutorials Program, Saturday, 1 May 1999, 8:30am–6:00pm

Track I, 8:30am–noon *An Introduction to Design Patterns*

John Vlissides (IBM T.J. Watson Research)

Track I, 1:30pm–5:00pm *Frameworks and Component Languages*

Jim Rhyne (IBM)

Track II, 8:30am–noon *The Trimiran Compiler Research Infrastructure*

Ben Goldberg (NYU), Krishna V. Palem (NYU), John C. Gyllenhaal (NYU), and Vinod Kathail (HP Labs)

Track II, 1:30pm–3:30pm *Design and Efficient Implementation of Virtual Machines*

Steven Lucco (Microsoft Research)

Track II, 4:00pm–6:00pm *Programming Languages and Mobile Code Security*

Edward Felten (Princeton University)

**ACM SIGPLAN Workshop for Compiler Support for Systems and Software
(WCSSS'99), Saturday, 1 May 1999,**

**ACM SIGPLAN Workshop on Languages, Compilers, and Tools for Embedded
Systems (LCTES'99), Wednesday, 5 May 1999**

**ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming
Systems (PPoPP'99), Tuesday–Thursday, 4–6 May 1999**