

ICFP 2009 Final Program

Monday, August 31, 2009

Invited Talk (Chair: Andrew Tolmach)

9:00 **Organizing Functional Code for Parallel Execution; or, foldl and foldr Considered Slightly Harmful**

Guy L. Steele, Jr.; Sun Microsystems

10:00 **Break**

Session 1 (Chair: Shin-Cheng Mu)

10:25 **Functional Pearl: La Tour D'Hanoi**

Ralf Hinze; University of Oxford

10:50 **Purely Functional Lazy Non-deterministic Programming**

Sebastian Fischer¹, Oleg Kiselyov², Chung-chieh Shan³; ¹Christian-Albrechts University, ²FNMOOC, ³Rutgers University

11:15 **Break**

Session 2 (Chair: Koen Claessen)

11:40 **Safe Functional Reactive Programming through Dependent Types**

Neil Sculthorpe and Henrik Nilsson; University of Nottingham

12:05 **Causal Commutative Arrows and Their Optimization**

Hai Liu, Eric Cheng, Paul Hudak; Yale University

12:30 **Lunch break**

Session 3 (Chair: Manuel Chakravarty)

14:00 **A Functional I/O System or, Fun for Freshman Kids**

Matthias Felleisen¹, Robert Bruce Findler², Matthew Flatt³, Shriram Krishnamurthi⁴; ¹Northeastern University, ²Northwestern University, ³University of Utah, ⁴Brown University

14:25 **Experience Report: Embedded, Parallel Computer-Vision with a Functional DSL**

Ryan R. Newton¹ and Teresa Ko²; ¹MIT CSAIL, ²UCLA Vision Lab

14:45 **Runtime Support for Multicore Haskell**

Simon Marlow, Simon Peyton Jones, Satnam Singh; Microsoft Research

15:10 **Break**

Session 4 (Chair: Amal Ahmed)

15:35 **Effective Interactive Proofs for Higher-Order Imperative Programs**

Adam Chlipala, Gregory Malecha, Greg Morrisett, Avraham Shinnar, Ryan Wisnesky; Harvard University

16:00 **Experience Report: seL4: Formally Verifying a High-Performance Microkernel**

Gerwin Klein¹, Philip Derrin², Kevin Elphinstone¹; ¹NICTA & UNSW, ²NICTA

16:20 **Biorthogonality, Step-Indexing and Compiler Correctness**

Nick Benton¹ and Chung-Kil Hur²; ¹Microsoft Research, ²University of Cambridge

16:45 **Break**

Session 5 (Chair: Stephanie Weirich)

17:10 **Scribble: Closing the Book on Ad Hoc Documentation Tools**

Matthew Flatt¹, Eli Barzilay², Robert Bruce Findler³; ¹University of Utah, ²Northeastern University, ³Northwestern University

17:35 **PC Chair's Report**

Andrew Tolmach; Portland State University

17:55 **Close**

Tuesday, September 1, 2009

Invited Talk (Chair: Graham Hutton)

9:00 **Lambda, the Ultimate TA: Using a Proof Assistant to Teach Programming Language Foundations**
Benjamin C. Pierce; University of Pennsylvania

10:00 **Break**

Session 6 (Chair: Xavier Leroy)

10:25 **A Universe of Binding and Computation**
Daniel Licata and Robert Harper; Carnegie Mellon University

10:50 **Non-Parametric Parametricity**
Georg Neis, Derek Dreyer, Andreas Rossberg; MPI-SWS

11:15 **Break**

Session 7 (Chair: Robby Findler)

11:40 **Finding Race Conditions in Erlang with QuickCheck and PULSE**
Koen Claessen¹, Michał Pałka¹, Nicholas Smallbone¹, John Hughes², Hans Svensson², Thomas Arts², Ulf Wiger³; ¹Chalmers University of Technology, ²Chalmers University of Technology and Quviq AB, ³Erlang Training and Consulting

12:05 **Partial Memoization of Concurrency and Communication**
Lukasz Ziarek, KC Sivaramakrishnan, Suresh Jagannathan; Purdue University

12:30 **Lunch break**

Session 8 (Chair: Conor McBride)

14:00 **Free Theorems Involving Type Constructor Classes**
Janis Voigtländer; Technische Universität Dresden

14:25 **Experience Report: Haskell in the “Real World” : Writing a Commercial Application in a Lazy Functional Language**
Curt J. Sampson; Starling Software

14:45 **Beautiful Differentiation**
Conal M. Elliott; LambdaPix

15:10 **Break**

Session 9 (Chair: Jim Hook)

15:35 **OXenstored: An Efficient Hierarchical and Transactional Database using Functional Programming with Reference Cell Comparisons**
Thomas Gazagnaire and Vincent Hanquez; Citrix Systems

16:00 **Experience Report: Using Objective Caml to Develop Safety-Critical Embedded Tools in a Certification Framework**
Bruno Pagano¹, Olivier Andrieu¹, Thomas Moniot¹, Benjamin Canou², Emmanuel Chailloux³, Philippe Wang³, Pascal Manoury⁴, Jean-Louis Colaço⁵; ¹Esterel Technologies, ²LIP6 - PPS - UPMC, ³LIP6 - UPMC, ⁴PPS - UPMC, ⁵Prover Technology S.A.S

16:20 **Identifying Query Incompatibilities with Evolving XML Schemas**
Pierre Genevès¹, Nabil Layaïda², Vincent Quint²; ¹CNRS, ²INRIA

16:45 **Break**

Session 10 (Chair: Mark Jones)

17:10 **Report on the Twelfth ICFP Programming Contest**
Andy Gill; University of Kansas

17:55 **Close**

Wednesday, September 2, 2009

Invited Talk (Chair: Lennart Augustsson)

9:00 **Commutative Monads, Diagrams and Knots**

Dan Piponi; Industrial Light & Magic

10:00 **Break**

Session 11 (Chair: Ralf Hinze)

10:25 **Generic Programming with Fixed Points for Mutually Recursive Datatypes**

Alexey Rodriguez Yakushev¹, Stefan Holdermans², Andres Löh², Johan Jeuring³; ¹Vector Fabrics B.V., ²Utrecht University, ³Utrecht University, Open University of the Netherlands

10:50 **Attribute Grammars Fly First-Class: How to do Aspect Oriented Programming in Haskell**

Marcos Viera¹, S. Doaitse Swierstra², Wouter S. Swierstra³; ¹Universidad de la Republica, Montevideo, ²Utrecht University, ³Chalmers University of Technology

11:15 **Break**

Session 12 (Chair: Norman Ramsey)

11:40 **Parallel Concurrent ML**

John Reppy¹, Claudio V. Russo², Yingqi Xiao¹; ¹University of Chicago, ²Microsoft Research

12:05 **A Concurrent ML Library in Concurrent Haskell**

Avik Chaudhuri; University of Maryland, College Park

12:30 **Lunch break**

Session 13 (Chair: Kathleen Fisher)

14:00 **Awards and Memorials:**

Most Influential ICFP'99 Paper Award (given by: Phil Wadler)

In Memoriam Peter Landin

Olivier Danvy; University of Aarhus

SIGPLAN Programming Languages Achievement Award: Rod Burstall (given by: Phil Wadler)

14:25 **Experience Report: OCaml for an Industrial-strength Static Analysis Framework**

Pascal Cuoq and Julien Signoles; CEA LIST

14:45 **Control-Flow Analysis of Function Calls and Returns by Abstract Interpretation**

Jan Midtgaard¹ and Thomas P. Jensen²; ¹Roskilde University, ²CNRS

15:10 **Break**

Session 14 (Chair: Phil Wadler)

15:35 **Automatically RESTful Web Applications: Marking Modular Serializable Continuations**

Jay A. McCarthy; Brigham Young University

16:00 **Experience Report: Ocsigen, a Web Programming Framework**

Vincent Balat, Jérôme Vouillon, Boris Yakobowski; Laboratoire Preuves, Programmes et Systèmes - Université Paris Diderot (Paris 7), CNRS

16:20 **Implementing First-Class Polymorphic Delimited Continuations by a Type-Directed Selective CPS-Transform**

Tiark Rumpf, Ingo Maier, Martin Odersky; EPFL

16:45 **Break**

Session 15 (Chair: Daan Leijen)

17:05 **A Theory of Typed Coercions and its Applications**

Nikhil Swamy¹, Michael Hicks², Gavin M. Bierman¹; ¹Microsoft Research, ²University of Maryland, College Park

17:30 **Complete and Decidable Type Inference for GADTs**

Tom Schrijvers¹, Simon Peyton Jones², Martin Sulzmann³, Dimitrios Vytiniotis²; ¹Katholieke Universiteit Leuven, ²Microsoft Research, ³Intaris Software GmbH

17:55 **Close**