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’Hanoï
Ralf Hinze; University of Oxford
10:50 Purely Functional Lazy Non-deterministic Programming
Sebastian Fischer¹, Oleg Kiselyov², Chung-chieh Shan³; ¹Christian-Albrechts University,
²FNMOC, 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
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, Michal Palka², 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
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 Andriant¹, Thomas Moniot¹, Benjamin Canou², Emmanuel Chailloux³, Philippe Wang³, Pascal Manoury¹, 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 Layaida², 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 Holdemans², 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)

      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 Vuillot, 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 Rompf, 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