

# ICFP 2009 Preliminary Program

Monday, August 31, 2009

## Invited Talk

- 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

- 10:25 **La Tour D'Hanoï**  
Ralf Hinze; University of Oxford
- 10:50 **Purely Functional Lazy Non-deterministic Programming**  
Sebastian Fischer<sup>1</sup>, Oleg Kiselyov<sup>2</sup>, Chung-chieh Shan<sup>3</sup>; <sup>1</sup>Christian-Albrechts University, <sup>2</sup>FNMOOC, <sup>3</sup>Rutgers University
- 11:15 **Break**

## Session 2

- 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

- 14:00 **A Functional I/O System, Or, Fun for Freshman Kids**  
Matthias Felleisen<sup>1</sup>, Robert Bruce Findler<sup>2</sup>, Matthew Flatt<sup>3</sup>, Shriram Krishnamurthi<sup>4</sup>; <sup>1</sup>Northeastern University, <sup>2</sup>Northwestern University, <sup>3</sup>University of Utah, <sup>4</sup>Brown University
- 14:25 **Experience Report: Embedded, Parallel Computer-Vision with a Functional DSL**  
Ryan Newton<sup>1</sup> and Teresa Ko<sup>2</sup>; <sup>1</sup>MIT CSAIL, <sup>2</sup>UCLA Vision Lab
- 14:45 **Runtime Support for Multicore Haskell**  
Simon Marlow, Simon Peyton Jones, Satnam Singh; Microsoft Research
- 15:10 **Break**

## Session 4

- 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 Klein<sup>1</sup>, Philip Derrin<sup>2</sup>, Kevin Elphinstone<sup>1</sup>; <sup>1</sup>NICTA & UNSW, <sup>2</sup>NICTA
- 16:20 **Biorthogonality, Step-Indexing and Compiler Correctness**  
Nick Benton<sup>1</sup> and Chung-Kil Hur<sup>2</sup>; <sup>1</sup>Microsoft Research, <sup>2</sup>University of Cambridge
- 16:45 **Break**

## Session 5

- 17:10 **Scribble: Closing the Book on Ad Hoc Documentation Tools**  
Matthew Flatt<sup>1</sup>, Eli Barzilay<sup>2</sup>, Robert Bruce Findler<sup>3</sup>; <sup>1</sup>University of Utah, <sup>2</sup>Northeastern University, <sup>3</sup>Northwestern University
- 17:35 **PC Chair's Report**  
Andrew Tolmach; Portland State University
- 17:55 **Close**

**Tuesday, September 1, 2009**

**Invited Talk**

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

10:00 **Break**

**Session 6**

- 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**

- 11:40 **Finding Race Conditions in Erlang with QuickCheck and PULSE**  
Koen Claessen<sup>1</sup>, Michał Pałka<sup>1</sup>, Nicholas Smallbone<sup>1</sup>, John Hughes<sup>2</sup>, Hans Svensson<sup>2</sup>, Thomas Arts<sup>2</sup>, Ulf Wiger<sup>3</sup>; <sup>1</sup>Chalmers University of Technology, <sup>2</sup>Chalmers University of Technology and Quviq AB, <sup>3</sup>Erlang 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**

- 14:00 **Free Theorems Involving Type Constructor Classes**  
Janis Voigtländer; Technische Universität Dresden
- 14:25 **Experience Report: Haskell in the Real World**  
Curt Sampson; Starling Software
- 14:45 **Beautiful Differentiation**  
Conal Elliott; LambdaPix

15:10 **Break**

**Session 9**

- 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 Tool in a Certification Framework**  
Bruno Pagano<sup>1</sup>, Olivier Andrieu<sup>1</sup>, Thomas Moniot<sup>1</sup>, Benjamin Canou<sup>2</sup>, Emmanuel Chailloux<sup>3</sup>, Philippe Wang<sup>3</sup>, Pascal Manoury<sup>4</sup>, Jean-Louis Colaço<sup>5</sup>; <sup>1</sup>Esterel-Technologies, <sup>2</sup>LIP6 - PPS - UPMC, <sup>3</sup>LIP6 - UPMC, <sup>4</sup>PPS - UPMC, <sup>5</sup>Prover Technology S.A.S
- 16:20 **Identifying Query Incompatibilities with Evolving XML Schemas**  
Pierre Genevès<sup>1</sup>, Nabil Layaïda<sup>2</sup>, Vincent Quint<sup>2</sup>; <sup>1</sup>CNRS, <sup>2</sup>INRIA

16:45 **Break**

**Session 10**

- 17:10 **Report on the Twelfth ICFP Programming Contest**  
Andy Gill; University of Kansas
- 17:55 **Close**

**Wednesday, September 2, 2009**

**Invited Talk**

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

Dan Piponi

10:00 **Break**

**Session 11**

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

Alexey Rodriguez<sup>1</sup>, Stefan Holdermans<sup>1</sup>, Andres Löh<sup>1</sup>, Johan Jeuring<sup>2</sup>; <sup>1</sup>Utrecht University, <sup>2</sup>Utrecht University, Open University of the Netherlands

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

Marcos Viera<sup>1</sup>, S. Doaitse Swierstra<sup>2</sup>, Wouter S. Swierstra<sup>3</sup>; <sup>1</sup>Instituto de Computacion Universidad de la Republica, Montevideo, <sup>2</sup>Utrecht University, <sup>3</sup>Chalmers, Gothenburg

11:15 **Break**

**Session 12**

11:40 **Parallel Concurrent ML**

John Reppy<sup>1</sup>, Claudio Russo<sup>2</sup>, Yingqi Xiao<sup>1</sup>; <sup>1</sup>University of Chicago, <sup>2</sup>Microsoft Research

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

Avik Chaudhuri; University of Maryland, College Park

12:30 **Lunch break**

**Session 13**

14:00 **Awards and Memorials**

**In Memoriam Peter Landin; Most Influential ICFP'99 Paper Award; SIGPLAN Programming Languages Achievement Award (Rod Burstall)**

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 Midtgaard<sup>1</sup> and Thomas P. Jensen<sup>2</sup>; <sup>1</sup>Roskilde University, <sup>2</sup>CNRS

15:10 **Break**

**Session 14**

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

Jay 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**

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

Nikhil Swamy<sup>1</sup>, Michael Hicks<sup>2</sup>, Gavin Bierman<sup>1</sup>; <sup>1</sup>Microsoft Research, <sup>2</sup>University of Maryland, College Park

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

Tom Schrijvers<sup>1</sup>, Simon Peyton Jones<sup>2</sup>, Martin Sulzmann<sup>3</sup>, Dimitrios Vytiniotis<sup>2</sup>; <sup>1</sup>K.U.Leuven, <sup>2</sup>Microsoft Research, <sup>3</sup>Intaris Software GmbH

17:55 **Close**