

# ICFP 2008 Final Program

Monday, Sep 22, 2008

**Invited Talk** (Chair: Peter Thiemann)

9:00 **Lazy and Speculative Execution in Computer Systems**  
*Butler Lampson*; Microsoft Research

10:00 **Break**

**Session 1** (Chair: Martin Sulzmann)

10:30 **Flux: Functional Updates for XML**

*James Cheney*; University of Edinburgh

10:55 **Typed Iterators for XML**

*Giuseppe Castagna*<sup>1</sup>, *Kim Nguyen*<sup>2</sup>; <sup>1</sup>PPS (CNRS) - Université Paris 7 - Paris, France, <sup>2</sup>LRI - Université Paris-Sud 11 - Orsay, France

11:20 **Break**

**Session 2** (Chair: Matthew Fluet)

11:50 **Aura: A Programming Language for Authorization and Audit**

*Limin Jia, Jeffrey Vaughan, Karl Mazurak, Jianzhou Zhao, Luke Zarko, Joseph Schorr, Steve Zdancewic*; U Pennsylvania

12:15 **The Power of Pi**

*Nicolas Oury, Wouter Swierstra*; University of Nottingham

12:40 **Lunch break**

**Session 3** (Chair: Ralf Hinze)

14:00 **Type Checking with Open Type Functions**

*Tom Schrijvers*<sup>1</sup>, *Simon Peyton Jones*<sup>2</sup>, *Manuel Chakravarty*<sup>3</sup>, *Martin Sulzmann*<sup>4</sup>; <sup>1</sup>K.U.Leuven, <sup>2</sup>Microsoft Research Cambridge, <sup>3</sup>UNSW, Sydney, <sup>4</sup>ITU, Denmark

14:25 **Graphic Type Constraints and Efficient Type Inference: from ML to MLF**

*Boris Yakobowski, Didier Remy*; INRIA

14:50 **Break**

**Session 4** (Chair: Tim Sheard)

15:20 **A Type-Preserving Compiler in Haskell**

*Louis-Julien Guillemette, Stefan Monnier*; U Montréal

15:45 **Experience Report: Playing the DSL Card, A Domain Specific Language for Component Configuration**

*Mark Jones*; Portland State University

16:05 **Generic Discrimination—Sorting and Partitioning Unshared Data in Linear Time**

*Fritz Henglein*; DIKU, University of Copenhagen

16:30 **Break**

**Session 5** (Chair: Norman Ramsey)

17:00 **Transactional Events for ML**

*Laura Effinger-Dean, Matthew Kehrt, Dan Grossman*; University of Washington

17:25 **Experience Report: Erlang in Acoustic Ray Tracing**

*Christian Convey*<sup>1</sup>, *Andrew Fredricks*<sup>1</sup>, *Christopher Gagner*<sup>1</sup>, *Douglas Maczwell*<sup>1</sup>, *Lutz Hamel*<sup>2</sup>; <sup>1</sup>Naval Undersea Warfare Centers, RI, USA, <sup>2</sup>Dept. of Computer Science and Statistics, U Rhode Island

17:45 **Implicitly-threaded parallelism in Manticore**

*Matthew Fluet*<sup>1</sup>, *Mike Rainey*<sup>2</sup>, *John Reppy*<sup>2</sup>, *Adam Shaw*<sup>2</sup>; <sup>1</sup>Toyota Technological Institute at Chicago, <sup>2</sup>University of Chicago

18:10 **PC chair's report**

Tuesday, Sep 23, 2008

**Invited Talk** (Chair: James Hook)

9:00 **Defunctionalized Interpreters for Higher-Order Languages**

*Olivier Danvy*; University of Aarhus

10:00 **Break**

**Session 6** (Chair: Andrew Tolmach)

10:30 **Parametric Higher-Order Abstract Syntax for Mechanized Semantics**

*Adam Chlipala*; Harvard University

10:55 **Typed Closure Conversion Preserves Observational Equivalence**

*Amal Ahmed, Matthias Blume*; Toyota Technological Institute at Chicago

11:20 **Break**

**Session 7** (Chair: Manuel Chakravarty)

11:50 **Write it Recursively: A Generic Framework for Optimal Path Queries**

*Akimasa Morihata, Kiminori Matsuzaki, Masato Takeichi*; University of Tokyo

12:15 **Efficient Nondestructive Equality Checking for Trees and Graphs**

*Michael D. Adams, R. Kent Dybvig*; Indiana University

12:40 **Lunch break**

**Session 8** (Chair: Zhenjiang Hu)

14:00 **Functional Pearl: Streams and Unique Fixed Points**

*Ralf Hinze*; University of Oxford

14:25 **Data-Flow Testing of Declarative Programs**

*Sebastian Fischer*<sup>1</sup>, *Herbert Kuchen*<sup>2</sup>; <sup>1</sup>U Kiel, <sup>2</sup>U Münster

14:50 **Break**

**Session 9** (Chair: Andrew Kennedy)

15:20 **Functional Translation of a Calculus of Capabilities**

*Arthur Charguéraud, François Pottier*; INRIA

15:45 **Experience Report: Paradise: A Two-Stage DSL Embedded in Haskell**

*Lennart Augustsson, Howard Mansell, Ganesh Sittampalam*; Credit Suisse

16:05 **Ynot: Reasoning with the Awkward Squad**

*Aleksandar Nanevski*<sup>1</sup>, *Greg Morrisett*<sup>2</sup>, *Avi Shinnar*<sup>2</sup>, *Paul Govereau*<sup>2</sup>, *Lars Birkedal*<sup>3</sup>; <sup>1</sup>Microsoft Research, Cambridge, <sup>2</sup>Harvard University, <sup>3</sup>IT University, Copenhagen

16:30 **Break**

**Session 10** (Chair: Michael Sperber)

17:00 **A Scheduling Framework for General-Purpose Parallel Languages**

*Matthew Fluet*<sup>1</sup>, *Michael Rainey*<sup>2</sup>, *John Reppy*<sup>2</sup>; <sup>1</sup>Toyota Technological Institute at Chicago, <sup>2</sup>University of Chicago

17:25 **Space Profiling for Parallel Functional Programs**

*Daniel Spoonhower*<sup>1</sup>, *Guy E. Blelloch*<sup>1</sup>, *Robert Harper*<sup>1</sup>, *Phillip B. Gibbons*<sup>2</sup>; <sup>1</sup>Carnegie Mellon University, <sup>2</sup>Intel Research Pittsburgh

17:50 **Short Break**

**Awards and Announcements** (Chair: Kevin Millikin)

18:00 **ICFP 2009 Announcement** (Phil Wadler)

18:10 **Most Influential ICFP'98 Paper Award** (Kathleen Fisher)

18:20 **Report on the Eleventh ICFP Programming Contest**

*Tim Sheard*<sup>1</sup>, *Tim Chevalier*<sup>1</sup>, *Chuan-kai Lin*<sup>1</sup>, *Garrett Morris*<sup>1</sup>, *Emerson Murphy-Hill*<sup>1</sup>, *Andy Gill*<sup>1</sup>, *John Reppy*<sup>2</sup>, *Lars Bergstrom*<sup>2</sup>, *Mike Rainey*<sup>2</sup>, *Adam Shaw*<sup>2</sup>, *Virgil Gheorghiu*<sup>2</sup>; <sup>1</sup>Portland State University, <sup>2</sup>University of Chicago

19:00 **Reception**

Wednesday, Sep 24, 2008

**Invited Talk** (Chair: Mitchell Wand)

9:00 **Polymorphism and Page Tables—Systems Programming From a Functional Programmer's Perspective**  
*Mark Jones*; Portland State University

10:00 **Break**

**Session 11** (Chair: Fritz Henglein)

10:30 **Pattern Minimization Problems over Recursive Data Types**

*Alexander Krauss*; TU München

10:55 **Deciding kCFA is complete for EXPTIME**

*David Van Horn, Harry Mairson*; Brandeis University

11:20 **Break**

**Session 12** (Chair: Derek Dreyer)

11:50 **HMF: Simple Type Inference for First-Class Polymorphism**

*Daan Leijen*; Microsoft Research

12:15 **FPH: First-class Polymorphism for Haskell**

*Dimitrios Vytiniotis*<sup>1</sup>, *Stephanie Weirich*<sup>1</sup>, *Simon Peyton Jones*<sup>2</sup>; <sup>1</sup>University of Pennsylvania, <sup>2</sup>Microsoft Research

12:40 **Lunch break**

**Session 13** (Chair: Chung-chieh Shan)

14:00 **Mixin' Up the ML Module System**

*Derek Dreyer, Andreas Rossberg*; MPI-SWS

14:25 **Compiling Self-Adjusting Programs with Continuations**

*Ruy Ley-Wild*<sup>1</sup>, *Matthew Fluet*<sup>2</sup>, *Umut Acar*<sup>2</sup>; <sup>1</sup>Carnegie Mellon University, <sup>2</sup>Toyota Technological Institute at Chicago

14:50 **Break**

**Session 14** (Chair: Henrik Nilsson)

15:20 **Flask: Staged Functional Programming for Sensor Networks**

*Geoffrey Mainland, Greg Morrisett, Matt Welsh*; Harvard University

15:45 **Experience Report: A Pure Shirt Fits Reflections on Haskell at Bluespec**

*Ravi Nanavati*; Bluespec, Inc.

16:05 **Functional Netlists**

*Sungwoo Park, Jinha Kim, Hyeonseung Im*; Pohang University of Science and Technology

16:30 **Break**

**Session 15** (Chair: Kathleen Fisher)

17:00 **NixOS: A Purely Functional Linux Distribution**

*Eelco Dolstra*<sup>1</sup>, *Andres Löh*<sup>2</sup>; <sup>1</sup>Delft University of Technology, <sup>2</sup>Utrecht University

17:25 **Experience Report: Visualizing Data through Functional Pipelines**

*David Duke*<sup>1</sup>, *Rita Borgo*<sup>1</sup>, *Colin Runciman*<sup>2</sup>, *Malcolm Wallace*<sup>2</sup>; <sup>1</sup>University of Leeds, UK, <sup>2</sup>University of York, UK

17:45 **Quotient Lenses**

*J. Nathan Foster*<sup>1</sup>, *Alexandre Pilkiewicz*<sup>2</sup>, *Benjamin C. Pierce*<sup>1</sup>; <sup>1</sup>University of Pennsylvania, <sup>2</sup>Ecole Polytechnique

18:10 **Closing**