0956-7968

# JOURNAL OF Functional Programming

VOLUME 20 PART 1 JANUARY 2010





### EDITORS-IN-CHIEF

Matthias Felleisen, College of Computer Science, Northeastern University, Boston, Massachusetts 02115, USA, matthias@ccs.neu.edu [Education Editor]

Xavier Leroy, INRIA Rocquencourt, Domaine de Voluceau, B.P. 105, 78153 Le Chesnay, France. Xavier.Leroy@inria.fr

# EDITORS

Richard S. Bird, Oxford University Computing Laboratory, Programming Research Group, 8-11 Keble Road, Oxford OX1 3QD, UK, bird@comlab.ox.ac.uk [Functional Pearls Editor]

Kathleen Fisher, AT & T, One River Oaks, San Jose, CA 95134-1918, USA. kfisher@research.att.com [Commercial Uses Editor]

Jeremy Gibbons, Oxford University Computing Laboratory, Wolfson Building, Parks Road, Oxford OX1 3QD, UK, jeremy.gibbons@comlab.ox.ac.uk [Functional Pearls Editor]

Robert Harper, School of Computer Science, Carnegie Mellon University, Pittsburgh, PA 15213-3890, USA. rwh@cs.cmu.edu [Theoretical Pearls Editor]

Shriram Krishnamurthi, Computer Science Department, Box 1910, Brown University, Providence, RI 02912-1910, USA. sk+105@cs.brown.edu [Educational Editor]

Eugenio Moggi, Universita di Genova, DISI, Via Dodecaneso 35, I-16146 Genova, Italy. moggi@disi.unige.it

Benjamin Pierce, Department of Computer and Information Science, University of Pennsylvania, 200 South 33rd Street, Philadelphia, PA 19104-6389, USA. bcpierce@cis.upenn.edu

Colin Runciman, Department of Computer Science, University of York, York YO10 5DD, UK.

colin.runciman@cs.york.ac.uk [Tools and Applications Editor]

## BOOK REVIEW EDITOR

Simon Thompson, Computing Laboratory, University of Kent, Canterbury, Kent CT2 7NF, UK. s.j.thompson@ukc.ac.uk

#### EDITORIAL BOARD

Andrew Adams-Moran, Galois Connections Inc, Beaverton, OR 97005, USA. adams-moran@galois.com Lennart Augustsson, Nilssonsberg 7, 411 43 Göteborg, Sweden, email: lennart.augustsson@gmail.com Manuel M. T. Chakravarty, School of Computer Science and Engineering, The University of New South Wales, UNSW Sydney NSW 2052 Australia. chak@cse.unsw.edu.au

Olivier Danvy, BRICS, University of Aarhus, IT-parken, Aabogade 34, DK-8200, Aarhus N, Denmark. danvy@brics.dk Robert Findler, Department of Computer Science, The University of Chicago, 1100 E. 58th Street, Chicago, IL 60637USA. robby@cs.uchicago.edu

Matthew Flatt, School of Computing, University of Utah, 50 S Central Campus Dr. 3190, Salt Lake City, UT 84112, USA, mflatt@cs.utah.edu

Ralf Hinze, Institut für Informatik III, Universität Bonn, Römerstr 164, D-53117 Bonn, Germany. ralf@informatik.uni-bonn.de

Paul Hudak, Department of Computer Science, P.O. Box 208285, Yale University, New Haven, CT 06520, USA. paul.hudak@yale.edu

Graham Hutton, School of Computer Science, University of Nottingham, Jubilee Campus, Wollaton Road, Nottingham, NG8 1BB, gmh@cs.nott.ac.uk

Mark P. Jones, Department of Computer Science, Portland State University, P.O. Box 751, Portland, OR 97207-0751, USA. mpj@cs.pdx.edu

Martin Odersky, Department of Computer Science, Ecole Polytechnique, Federale de Lausanne, CH-1015 Lausanne, Switzerland. martin.odersky@epfl.ch

Norman Ramsey, Department of Computer Science, Halligan Hall, Tufts University, 161 College Ave, Medford, MA 02155, USA. cs.tufts.edu

Dr Didier Rémy, INRIA Rocquencourt, Domaine de Voluceau, P.P. 105, F-78153 Le Chesnay, France. Didier.Remy@inria.fr

Zhong Shao, Department of Computer Science, Yale University, 51 Prospect Street, New Haven, CT 06520-8285, USA. shao-zhong@cs.yale.edu

Eijiro Sumii, Graduate School of Information Science, Tohoku University, Aramaki aza Aoba 6-3-09, Aoba-ku, Sendai-city, Miyagi-prefecture, 980-8579, Japan, email: sumii@ecei.tohoku.ac.jp

Stephanie Weirich, University of Pennsylvania, School of Engineering and Applied Science, Department of Computer and Information Science, Levine Hall, 3330 Walnut Street, Philadelphia, PA 19104-6389, USA, email: sweirich@cis.upenn.edu

### INTERNET ACCESS

The JFP web site contains details of all papers published to date, information for authors, and other supplementary material at journals.cambridge.org/jfp

This journal issue has been printed on FSC-certified paper and cover board. FSC is an independent, non-governmental, not-for-profit organization established to promote the responsible management of the world's forests. Please see www.fsc.org for information.