

THE LITTLE SCHEMER

Fourth Edition

Daniel P. Friedman and Matthias Felleisen
foreword by *Gerald J. Sussman*

Known previously as *The Little LISPer*, this book offers a new edition of one of the most respected and well-known books in computer science. Displaying a unique combination of solid technical information and humorous presentation, it conveys the excitement of programming as a tool for solving problems.

216 pp., 12 illus. \$16.50 paper

THE SEASONED SCHEMER

Daniel P. Friedman and Matthias Felleisen
foreword and afterword by *Guy L. Steele, Jr.*

An advanced guide to programming using the Scheme language, *The Seasoned Schemer* informs the reader about additional dimensions of computing: functions as values, change of state, and exceptional cases.

224 pp., 11 illus. \$18.50

THE MIT PRESS

ALGEBRAIC SEMANTICS OF IMPERATIVE PROGRAMS

Joseph A. Goguen
and *Grant Malcolm*

This book presents a self-contained and novel "executable" introduction to formal reasoning about imperative programs. The authors' primary goal is to improve programming ability by improving intuition about what programs mean and how they run.

Foundations of Computing series
232 pp. \$32.00

<http://www-mitpress.mit.edu>

To order call toll-free **1-800-356-0343**
(US & Canada) or (617) 625-8569.

INSTRUCTIONS TO AUTHORS

Scope

Papers may describe original technical work, survey an area, or present a tutorial; and may be either short or long. Anything related to functional programming is of interest, including: *foundations* (semantics, abstract interpretation, lambda calculi, rewriting, logic, type theory, category theory); *implementation* (compilation, architectures, parallelism, garbage collection, I/O, debugging, profiling); *linguistics* (pure and impure language features, non-determinism, side effects, logical variables, relation to other programming paradigms, proofs about programs, program transformation, program synthesis, partial evaluation); *applications* (applications programs, practical experience, programming techniques, prototyping).

Book Reviews

Books for review, or suggestions for reviews, should be sent to the reviews editor, Philip Wadler (address on inside front cover).

Submission of manuscripts

Papers may be submitted to the Editor-in-Chief or any of the editors. Please choose an Editor whose research interests most closely match your paper; if in doubt, send your paper to the Editor-in-Chief. E-mail and postal addresses for the editors appear on the inside front cover. Electronic submission is encouraged: send e-mail containing a copy of the paper in Postscript form. Any method of producing Postscript is fine, but TeX is recommended as it can also be used for typesetting the final paper; see below. Alternatively, post four hard copies of the paper. Submissions should be accompanied by the author's mailing address, telephone and fax number, and, if possible, an electronic mailing address. Submission of a paper is taken to imply that it has not been previously published and that it is not being considered for publication elsewhere. Authors should inform the editor of any related papers submitted or published elsewhere. Upon acceptance of a paper, the author will be asked to transfer copyright to the publisher.

Electronic manuscripts

The publisher encourages the submission of manuscripts written in LaTeX which can be used for direct typesetting. Authors using LaTeX are recommended to use the JFP style file which can be obtained using anonymous FTP from the Internet address `ftp.cup.cam.ac.uk`. Retrieve from directory `/pub/texarchive/journals/latex/jfp` the style file `jfp.sty` and the user guide `jfpguide.tex`. In case of difficulties obtaining these files, there is a help-line available via e-mail, please contact `texline@cup.cam.ac.uk`. Alternatively, authors may use 'article style'. The publisher may be able to use Plain TeX and AMSTeX for typesetting if submitted by authors. *On final acceptance of a paper*, send the TeX source code to the editor by e-mail, or by posting a disc. Discs should be in Apple Mac or PC format and will not be returned. The publisher reserves the right to typeset any article by conventional means if the author's TeX code presents problems in production.

Layout of manuscripts

Manuscripts should begin with an abstract of not more than 300 words. Please avoid footnotes whenever possible. Papers should conform to a good standard of English prose; please consult a style guide such as 'The Elements of Style' by Strunk and White, Macmillan, New York. It is encouraged to present programs in one of two styles: either with identifiers in italic and keywords in bold, or entirely in a fixed-width teletype font. Do not begin a sentence with a symbol or identifier name.

Illustrations

Figures should be drawn in indian ink on good quality white paper or produced by computer to comparable quality. Wherever possible they will be reproduced with the author's original lettering. Originals of figures should not be sent until the paper has been accepted. A list of captions for figures should be attached separately.

References

The Harvard system of references should be used. Citations are by author's surname and year of publication, and may stand either as a noun phrase (e.g., "Curry (1933)") or as a parenthetical note (e.g., "(Curry 1933)"). List references at the end of the text in alphabetical order. A typical entry is: Curry, H. B. (1933) Apparent variables from the standpoint of mathematical logic, *Ann. of Math.*, 34 (2): 381–404.

Capsule reviews

Every published paper is accompanied by a capsule review written by one of the referees. A capsule review differs from an abstract in that it is more free to reflect value judgements, helping to set the context or emphasise the importance of a contribution.

Proofreading

Typographical or factual errors only may be changed at the proof stage. Authors may be charged for correction of non-typographical errors. No page charge is made.

Offprints

25 offprints of each article will be supplied free to each first named author. Extra offprints may be purchased from the publisher.

Please contact the editors for clarification of any of the above points.

COPYING

This journal is registered with the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA. 01923, USA. Organisations in the USA who are also registered with the C.C.C. may therefore copy material (beyond the limits permitted by sections 107 and 108 of US copyright law) subject to payment to C.C.C. of the per-copy fee of \$11.00. This consent does not extend to multiple copying for promotional or commercial purposes. Code 0956-7968/96 \$11.00+.10.

Organisations authorised by the Copyright Licensing Agency may also copy material subject to the usual conditions.

ISI Tear Service, 3501 Market Street, Philadelphia, Pennsylvania 19104, USA, is authorised to supply single copies of separate articles for private use only.

For all other use, permission should be sought from Cambridge or the American branch of Cambridge University Press.

JOURNAL OF
Functional Programming

VOLUME 6 PART 2 MARCH 1996

CONTENTS

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Reference counting as a computational interpretation of linear logic JAWAHAR CHIRIMAR, CARL A. GUNTER AND JON G. RIECKE | 195 |
| Canonical typing and Π -conversion in the Barendregt Cube FAIROUZ KAMAREDDINE AND ROB NEDERPELT | 245 |
| Generating action compilers by partial evaluation ANDERS BONDORF AND JENS PALSBERG | 269 |
| A confluent reduction for the λ -calculus with surjective pairing and terminal object PIERRE-LOUIS CURIEN AND ROBERTO DI COSMO | 299 |
| Formal basis for the refinement of rule based transition systems A. N. CLARK | 329 |
| Predictive parser combinators need four values to report errors ANDREW PARTRIDGE AND DAVID WRIGHT | 355 |
| Functional Pearl: Deduction for functional programmers J. J. LEIFER AND B. A. SUFRIN | 365 |
| Book review | 375 |

Printed in Great Britain by the University Press, Cambridge

CAMBRIDGE
UNIVERSITY PRESS



0956-7968(199603)6:2;1-D