Prof. Dr. Maurizio Gabbrielli Università di Bologna Bologna Italy Prof. Dr. Simone Martini Università di Bologna Bologna Italy

Series editor
Ian Mackie

Advisory board
Samson Abramsky, University of Oxford, UK
Chris Hankin, Imperial College London, UK
Dexter Kozen, Cornell University, USA
Andrew Pitts, University of Cambridge, UK
Hanne Riis Nielson, Technical University of Denmark, Denmark
Steven Skiena, Stony Brook University, USA
Iain Stewart, University of Durham, UK
David Zhang, The Hong Kong Polytechnic University, Hong Kong

ISSN 1863-7310 ISBN 978-1-84882-913-8 e-ISBN 978-1-84882-914-5 DOI 10.1007/978-1-84882-914-5 Springer London Dordrecht Heidelberg New York

British Library Cataloguing in Publication Data A catalogue record for this book is available from the British Library

Library of Congress Control Number: 2010922995

Translated from the original Italian edition: "Linguaggi di programmazione: principi e paradigmi", published in 2006 by McGraw-Hill Companies, Publishing Group Italia.

© Springer-Verlag London Limited 2010

Apart from any fair dealing for the purposes of research or private study, or criticism or review, as permitted under the Copyright, Designs and Patents Act 1988, this publication may only be reproduced, stored or transmitted, in any form or by any means, with the prior permission in writing of the publishers, or in the case of reprographic reproduction in accordance with the terms of licenses issued by the Copyright Licensing Agency. Enquiries concerning reproduction outside those terms should be sent to the publishers.

The use of registered names, trademarks, etc., in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant laws and regulations and therefore free for general use.

The publisher makes no representation, express or implied, with regard to the accuracy of the information contained in this book and cannot accept any legal responsibility or liability for any errors or omissions that may be made.

Printed on acid-free paper

Springer is part of Springer Science+Business Media (www.springer.com)