

IJCAI-11



**IJCAI-11**

# **Proceedings of the Twenty-Second International Joint Conference on Artificial Intelligence**

Barcelona, Catalonia, Spain, 16–22 July 2011

*Edited by*

**Toby Walsh,**

*NICTA and University of NSW*

*Sponsored by*

International Joint Conferences on Artificial Intelligence (IJCAI)

AAAI Press / International Joint  
Conferences on Artificial Intelligence  
Menlo Park, California

Copyright © 2011  
International Joint Conferences on Artificial Intelligence

All rights reserved. No part of this book may be reproduced in any form by any electronic or mechanical means (including photocopying, recording, or information storage and retrieval) without permission in writing from the publisher.

IJCAI Secretary-Treasurer  
Prof. Dr. Bernhard Nebel  
Computer Science Department  
Albert-Ludwigs-Universitaet Freiburg  
Georges-Koehler-Allee, Geb. 052  
D-79110 Freiburg, Germany

IJCAI Executive Secretary  
Ms. Vesna Sabljakovic-Fritz  
Vienna University of Technology  
Institute of Discrete Mathematics and Geometry E104  
Wiedner Hauptstr. 8-10  
A-1040 Vienna, Austria

Copublished and Distributed by  
AAAI Press  
445 Burgess Drive, Suite 100  
Menlo Park CA 94025 USA

ISBN 978-1-57735-512-0 (three-volume set)  
ISBN 978-1-57735-513-7 (volume one)  
ISBN 978-1-57735-514-4 (volume two)  
ISBN 978-1-57735-515-1 (volume three)  
ISBN 978-1-57735-516-8 CD-ROM

Manufactured in the United States of America