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## *Aims and Scope*

Optimization has been expanding in all directions at an astonishing rate during the last few decades. New algorithmic and theoretical techniques have been developed, the diffusion into other disciplines has proceeded at a rapid pace, and our knowledge of all aspects of the field has grown even more profound. At the same time, one of the most striking trends in optimization is the constantly increasing emphasis on the interdisciplinary nature of the field. Optimization has been a basic tool in all areas of applied mathematics, engineering, medicine, economics, and other sciences.

The series *Springer Optimization and Its Applications* publishes undergraduate and graduate textbooks, monographs and state-of-the-art expository work that focus on algorithms for solving optimization problems and also study applications involving such problems. Some of the topics covered include nonlinear optimization (convex and nonconvex), network flow problems, stochastic optimization, optimal control, discrete optimization, multi-objective programming, description of software packages, approximation techniques and heuristic approaches.

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Panos M. Pardalos • Anatoly Zhigljavsky  
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# Advances in Stochastic and Deterministic Global Optimization

 Springer

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# Preface

Antanas Žilinskas was born on January 5, 1946, in Lithuania. He graduated with a gold medal from 2nd Kaunas Gymnasium in 1963 and with a distinction diploma of Electrical Engineering from Kaunas University of Technology in 1968. His Ph.D. studies (aspirantura) at Lithuanian Academy of Sciences lasted from 1970 to 1973. The Candidate of Sciences (Ph.D.) degree in Technical Cybernetics (1973) has been received from Kaunas University of Technology. The Doctor of Mathematical Sciences degree (Habilitation, 1985) has been received from St. Petersburg (Leningrad) University. The title Senior Research Fellow (1980) has been conferred by the Presidium of Academy of Sciences, and the title Professor (1989) by Vilnius Pedagogical University. He has been awarded (with V. Šaltenis and G. Dzemyda) Lithuanian National Award for scientific achievements of 2001 for the research on “Efficient optimization methods and their applications.”

A. Žilinskas joined the Institute of Mathematics and Informatics in 1973 starting with a position of junior research associate and worked as a senior research associate reaching the highest rank of principal researcher which is his main position now. Apart from working in the research institute, he was a lecturer at Vilnius Pedagogical University in 1986–1988, where he founded the Department of Informatics in 1988 and held a position of professor and head of this department in 1988–1993. He worked later as a professor of this department until 2000. He founded the Department of Applied Informatics at Vytautas Magnus University in 1994 and was holding a position of professor and head of this department. A. Žilinskas taught optimization theory and methods at all levels; operations research; analysis of algorithms at all levels; and calculus, statistics, and linear algebra for undergraduates.

A. Žilinskas held a visiting Konrad Zuse professorship at Dortmund University (1990/1991 academic year). As a visiting research professor, he worked at Åbo Akademi, Technical University Aachen, Copenhagen University, University College London, and Cardiff University.

A. Žilinskas is a member of Lithuanian Academy of Sciences. He is a member of editorial boards of *Journal of Global Optimization*, *Control and Cybernetics*, *Informatica*, *The Open Cybernetics and Systemics Journal*, and *International Journal of Grid and High Performance Computing*. He is a member of IFIP working group *Optimization-Based Computer-Aided Modeling and Design* and of *American Mathematical Society*. He is a reviewer for *Mathematical Reviews*, *Zentralblatt für Mathematic*, book section of *INFORMS Interfaces*.

Many projects were fulfilled by A. Žilinskas for industry in the 1970s and the 1980s; e.g., the results of optimal design of magnetic deflection systems of color TV sets and of optimal design of pigment mixtures for paint technology are referenced in the book *Global Optimization*, Springer, 1989, written with A. Törn. He was a chairman of Lithuanian part of international project *Computing, Information Services and the Internet*, which was fulfilled in 1996–1997 cooperating with Växjö University (Sweden). He was a managing director of TEMPUS project *Modelling of Economics and Business Systems* funded by EU in 1997–2000 with participation of Vytautas Magnus University, Kaunas University of Technology from Lithuania, Copenhagen University (Denmark), and Maastricht University (the Netherlands) from EU. He was a partner (with Prof. J. Calvin) in the project *Probabilistic Analysis of Global Optimization Algorithms* funded by National Research Council (USA) under *Collaboration in Basic Science and Engineering Program 1998–2000*.

A. Žilinskas has published more than 200 papers mainly on statistical global optimization theory, algorithms, and applications, 6 monographs, and 6 textbooks; the titles of the monographs are:

- Žilinskas, A.: *Global Optimization: Axiomatic of Statistical Models; Algorithms; Applications*. Mokslas (1986) (in Russian)
- Törn, A., Žilinskas, A.: *Global Optimization*. Springer (1989)
- Šaltenis, V., Žilinskas, A.: *Search for Optimum*. Nauka (1989)
- Zhigljavsky, A., Žilinskas, A.: *Methods of Search for Global Extremum*. Nauka (1991) (in Russian)
- Zhigljavsky, A., Žilinskas, A.: *Stochastic Global Optimization*. Springer (2008)
- Pardalos, P.M., Žilinskas, A., Žilinskas, J.: *Non-Convex Multi-Objective Optimization*. Springer, New York (2016)

Current research interests of A. Žilinskas are statistical theory of global optimization, multi-objective optimization, optimization-based modeling and design, and analysis of multidimensional data by means of visualization. Research is oriented to development of statistical models for global optimization, implementation and investigation of the corresponding algorithms, and application of these algorithms to practical problems.

This book is dedicated to A. Žilinskas on the occasion of his 70th birthday. The chapters cover some of the research interests of A. Žilinskas. The book is divided into three parts: I. *Theory and Algorithms for Global Optimization*; II. *Applications of Global Optimization*; and III. *Multi-Objective Global Optimization*.

On behalf of all the contributors of this Festschrift, we would like to congratulate Antanas Žilinskas on the occasion of his 70th birthday and wish him well and continued success in his scientific career.

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Gainesville, FL, USA  
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January 2016

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