

# Lecture Notes in Control and Information Sciences



Edited by A.V. Balakrishnan and M.Thoma  
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22

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## Optimization Techniques

Proceedings of the  
9th IFIP Conference on Optimization Techniques  
Warsaw, September 4-8, 1979

### Part 1

Edited by  
K. Iracki, K. Malanowski, S.Walukiewicz

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## PREFACE

These Proceedings contain most of the papers presented at the 9th IFIP Conference on Optimization Techniques held in Warsaw, Poland on September 4-8, 1979.

The Conference was sponsored by the IFIP Technical Committee on System Modelling and Optimization /TC//.

It was organized by the Systems Research Institute of the Polish Academy of Sciences with cooperation of the Mathematical Institute of the Polish Academy of Sciences and the Institute of Automatic Control of the Technical University of Warsaw.

The European Research Office /ERO/ in London has contributed to the Conference with a grant appropriated for partial covering of travel expenses of invited speakers.

The Conference was attended by 284 scientists from 29 countries. The Conference Program comprised 8 plenary lectures, 131 contributed papers classified into 15 sections, and a Round Table Session on Systems Techniques in Economics.

The program offered a broad view of recent developments in theory and computational methods of optimization and their applications in various fields of science and technology. The emphasis was on advances in optimal control and mathematical programming techniques as well as their applications to modelling and control in particular in economics, and environmental and energy systems.

The Proceedings are composed of two volumes. The first volume contains plenary lectures, pannel addresses of the Round Table Session and the contributed papers dealing essentially with optimal control. In the second volume there are collected papers devoted essentially to mathematical programming and various applications.

The International Program Committee of the Conference consisted of:

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