

Cambridge University Press

978-0-521-09305-7 - Nonparametric Techniques in Statistical Inference

Edited by Madan Lal Puri

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**NONPARAMETRIC TECHNIQUES IN
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EDITED BY

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CAMBRIDGE
AT THE UNIVERSITY PRESS
1970

Cambridge University Press
978-0-521-09305-7 - Nonparametric Techniques in Statistical Inference
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Frontmatter
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CAMBRIDGE UNIVERSITY PRESS
Cambridge, New York, Melbourne, Madrid, Cape Town, Singapore, São Paulo, Delhi

Cambridge University Press
The Edinburgh Building, Cambridge CB2 8RU, UK

Published in the United States of America by Cambridge University Press, New York

www.cambridge.org
Information on this title: www.cambridge.org/9780521078177

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First published 1970
This digitally printed version 2008

A catalogue record for this publication is available from the British Library

Library of Congress Catalogue Card Number: 74-116750

ISBN 978-0-521-07817-7 hardback
ISBN 978-0-521-09305-7 paperback

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PREFACE

For the last two decades, the field of nonparametric statistics has been occupying an increasingly successful role in statistical theory as well as in the methods of application. The importance of the developments in this area is now very well recognized not only by its elegant theory, but also because of the significantly improved performances, the non-parametric methods are yielding in various applications in the fields of Biometrics, Agriculture, Economics and industry among others.

Many of the research workers who have been concerned with non-parametric statistics felt the need for a meeting which by providing an opportunity for personal contacts among scholars from different intellectual centres of the world, could survey the present state of the subject, disseminate the recent research, discuss the major open problems, and provide stimulation for further research and scholarship through the lectures of carefully selected speakers. To meet this purpose, the first International Symposium on Nonparametric Techniques in Statistical Inference was held at Indiana University, Bloomington, Indiana, 1–6 June 1969. Professor L. L. Merrit, Jr, Vice-President for Research and Dean of Advanced Studies at Indiana University, was kind enough to make the opening remarks, and Colonel W. R. Trott, Air Force Office of Scientific Research, welcomed the guests. Professors Z. W. Birnbaum and Jerzy Neyman were the main speakers at the final banquet.

The program committee of the symposium consisted of Professor H. A. David, Professor Jack Kiefer, Colonel W. R. Trott and myself. I take this opportunity to express my sincere thanks to the members of this committee for the overall help they gave me in making the symposium a great success. I also benefited greatly by the advice I received from Mr B. R. Agins in the planning of the symposium. To Professors H. A. David and Jack Kiefer, my thanks are due also for their help in selecting the contributors. In this task I was also profited greatly by the advice I received from Professors Z. W. Birnbaum, Jaroslav Hájek, Wassily Hoeffding, Ronald Pyke and Milton Sobel. It is a pleasure to express my deep appreciation to all of them.

The proceedings of the symposium are divided into seven parts. Parts 1 and 2 are devoted to the problems of testing and estimation. Part 3 deals with order statistics and allied problems. Part 4 deals with general theory. Part 5 deals with Ranking and Selection procedures. Part 6 deals with Decision Theoretic and Empirical Bayes procedures. Part 7 is

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devoted to the teaching of nonparametric statistics at the elementary level.

Professors R. E. Bechhofer, Patrick Billingsley, Julius Blum, H. A. David, H. T. David, S. S. Gupta, Jaroslav Hájek, Wassily Hoeffding, G. Kallianpur, Leo Katz, Oscar Kempthorne, Jerzy Neyman, G. E. Noether, J. W. Pratt, Ronald Pyke, Murray Rosenblatt, S. Sherman, Milton Sobel and Drs A. W. Marshall, William H. Pell and R. G. Pohrer very kindly presided over different sessions.

For acting as formal discussants and/or referees of the papers, my sincere thanks are due to Professors R. E. Bechhofer, H. A. David, H. T. David, Václav Dupač, J. Gastwirth, J. Hájek, Wassily Hoeffding, Oscar Kempthorne, Jack Kiefer, D. S. Moore, J. W. Pratt, P. S. Puri, Ronald Pyke, P. K. Sen, Milton Sobel, Lajos F. Takács, M. Woodroffe, and Drs J. E. Jackson, Gary C. McDonald and A. W. Marshall.

It is also a pleasure to express my appreciation to Mr Paul Bigelow, Professors J. Chadam, and J. Thompson, and Mr Norman Wykoff for taking care of the problems connected with local arrangements. For transportation and other logistic problems very valuable assistance was received from my students, Irvin Bossler, David Donley, Michael Ehrsam, John Gaisser, Carl T. Russel and Norman Wykoff.

The contributors are to be thanked for the fine spirit of co-operation and the prompt handling of the correspondence.

The symposium would not have been possible without the very generous support from the Air Force Office of Scientific Research. My heartiest thanks are due to Dr R. G. Pohrer and Colonel W. R. Trott who took personal interest in the project, and gave me all the help I needed in making this special event successful. It is also a pleasure to express my deep sense of appreciation to Indiana University for providing excellent facilities to hold this conference.

Special thanks are due to the personnel of the Cambridge University Press for taking care of the many complexities of publishing the manuscripts with the utmost care and patience.

Last but not the least my thanks go to the Department of Mathematics and my colleagues therein for their helpful attitude towards the success of the symposium. Special thanks are due to Professor George Springer, Chairman of the Department of Mathematics, who in spite of his multifarious activities, spent a considerable amount of time from the initiation to the completion of this project and gave me very valuable assistance and advice. It is a pleasure to express here my deep appreciation.

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