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Energy Minimization Methods in Computer Vision and Pattern Recognition

International Workshop EMMCVPR'97
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Preface

Energy minimization methods represent a fundamental methodology in computer vision and pattern recognition, with roots in such diverse disciplines as physics, psychology, and statistics. Recent manifestations of the idea include Markov random fields, deformable models and templates, relaxation labelling, various types of neural networks, etc. These techniques are now finding application in almost every area of computer vision from early to high-level processing. Although the subject is well represented in major international conferences in the fields of computer vision, pattern recognition, and neural networks, there has been no attempt to organize a specialized meeting on energy minimization methods. Collected in this volume are the papers presented at the International Workshop on Energy Minimization Methods in Computer Vision and Pattern Recognition (EMMCVPR'97) held at the University of Venice, Italy, from May 21-23, 1997. Our primary motivation in organizing this workshop was to offer researchers the chance to report their work in a forum that allowed for both consolidation of efforts and intensive informal discussion.

The idea of holding this meeting was originally conceived in York during the summer of 1995. Early in 1996 we issued a call for papers. This resulted in 62 submissions from 19 countries. Each paper was reviewed by three committee members who were asked to comment on the technical quality of the submissions and provide suggestions for possible improvement. In December 1996 we met in Venice to make the selection of papers for the workshop program. Based on the comments of the reviewers as well as on time and space constraints we selected 18 papers for oral presentation and 11 papers to be delivered as posters. We make no distinction between these two types of papers in this book.

An important aspect of this workshop are the keynote and invited talks. The keynote paper which opened the workshop was given by Shimon Ullman whose ideas have exerted a great influence over this subject for almost twenty years. The four invited speakers, Josef Kittler, Anil Jain, Alan Yuille, and Steve Zucker, have all played pivotal roles in the development of key areas in the field.

Finally, we must offer thanks to those who have helped us in bringing reality to the idea of holding this workshop. Firstly, we thank the program committee for reviewing the papers and providing insightful comments to their authors. We also gratefully acknowledge the work of Laure Blanc-Feraud and Mario Figueiredo who provided additional reviews. Although the workshop was intended to be small we hope that this book will reach a larger audience. In this respect we are extremely grateful to Alfred Hofmann at Springer who responded positively to our proposal to publish this volume in the Lecture Notes in Computer Science series. At York most of the hard work of assembling the proceedings volume has been very professionally executed by Philip Worthington. Last, but by no means least, we thank the various organizations who have provided support for this workshop. The International Association for Pattern Recognition provided us with publicity. The University of Venice "Cá Foscari" provided us with a wonderful lecture hall in the "Cá Dolfin" building, right in the historical centre of Venice. The Department of Applied Mathematics and Computer Science of the University of Venice and the SAF s.r.l. company provided administrative support.

In closing, one of us (MP) would like to heartily thank his wife, Rosanna, not only for the invaluable contribution and help given during the various stages of the workshop organization, but also for providing the inspiration to conceive this event.

February 1997 Marcello Pelillo and Edwin Hancock

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