

Preface

The articles in this special issue of the International Journal of Imaging Systems and Technology are based on presentations made in a working conference on Computer Vision held at the Institute for studies in theoretical Physics and Mathematics (IPM) in Tehran, Iran in April of 2004. In addition to the local participants from various universities in Iran, there were speakers from France, Italy, the Netherlands, Sweden, Switzerland, and the United States.

The general theme of the conference and a basic issue in computer vision is the understanding of images through the recognition of and finding similar objects in various environments. There are many aspects to this very complex issue. The article by d'Amico, Frosini, and Landi discusses shape comparison through the application of geometric shape functions. Higher-order color invariant features combined with similarity measures based on entropic graphs are utilized by van Gemert, Berghouts, Seinstra, and Geusebroek for estimating similarity of two images. A new way of describing objects via a continuous descriptor using a dictionary of basic functions together with a matching pursuit algorithm is the focus of the research by Mendels, Vandergheynst, and Thiran. Entropic graphs divergence measures as a quantifier for similarity is evaluated in the article by Neemuchwala, Hero, and Carson. A new numerical invar-

iant as a texture descriptor and its applications are discussed in the articles by Tavakoli et al. Statistical analysis of image data and their fusion, the resulting enhancement of images, and possible medical applications are discussed by Djafari and Feron. Articles by Caputo, Alipour et al. address other object matching and recognition problems. Finally, the issue of recognizing and finding objects in real environments and the design of integrated vision systems capable of performing real tasks is the theme of the research by Bjorkman and Eklundh.

The organizers of the conference and the guest editor are particularly grateful to Professor Larry Shepp and his coeditors for inviting this special issue. It is the expectation of the editors that this special issue will facilitate the participation of research scientists in Iran in the international community and the universal nature of scientific endeavors will enhance mutual understanding and harmony. The financial support of IPM for the conference is also gratefully acknowledged.

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