Preface

Advances in computing power and sensor technology has ushered in a golden era for Image Processing. The availability of low cost computing power on desktops in recent years and crash in prices of image processing hardware has made Image Processing reach the desktop and permeate into all realms of human life. Large number of Universities and Research Laboratories all over the world are actively engaged in finding new techniques and applications for image processing. To give a flavor of the kind of work carried out in image processing, it is planned to bring out special issues on image processing at intervals. This issue is first in the series.

This issue contains five papers. The first paper entitled "Directional Image Analysis with the Hough and Radon Transform" by Prof. Rangayyan and Mr. William A. Rolston deals with obtaining quantitative information on the directional distribution of features in an image using concepts from Radon transform. The paper uses the property of Radon transform to decompose a 2-D distribution into a set of 1-D independent directional distributions of the image. In the second paper, entitled "Image Enhancement Based on Edge Profile Acutance" by Prof. Rangayyan and Mr. Arup Das proposes an image enhancement technique based on increasing the edge profile acutance of an ROI. The edge profile acutance is computed by a new method based on the mean squared gradient along the normals of an ROI.

The third paper, entitled "Edge Detection through a time-homogenous Markov Chain", by Uma S Rajan, Prof. Borkar and Prof. Sastry presents a computationally efficient edge detection algorithm based on Monte Carlo-type stochastic algorithm. The edges are modeled as points corresponding to a relatively high value of a norm of a gradient of filtered image. The edge points are tracked by means of a stochastic process . The fourth paper entitled "A Tracking-Based General Framework to Image Halftoning" by Prof. A Makur and Prof. M. R. Raghuveer proposes a general framework for digital halftoning of images which unifies most existing halftoning algorithms. The last paper by Mr. R. Mahesh and Prof. S. Chaudhuri entitled "A Document Processing System for Detecting Text on Cover pages" addresses the problem of identifying sparsley located text on cover pages of books or magazines and is in the area of document image processing.

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