



Systems, Man & Cybernetics Society Lecture
Similarity Matching and Semantic Based Image Retrieval

Professor Prabir Bhattacharya

Canada Research Chair
Concordia University, Montreal, Quebec

Abstract

The exponential growth of image data in various formats has created a compelling need for innovative tools for managing, retrieving, presenting, and analyzing information from image databases. Most applications such as digital libraries, image search engines, medical diagnostic, require effective and efficient image retrieval techniques to access the images based on their contents, commonly known as content-based image retrieval (CBIR). Early CBIR systems used low-level visual features without any semantic interpretation of images and as a result, contributed to the well known *semantic-gap* problem. New concepts are gaining popularity to improve image understanding and retrieval in the form of semantic image classification, adaptive similarity matching, and relevance feedback (RF). In this talk, we present common techniques and issues related to CBIR and some of our own approaches towards semantic-based image retrieval by utilizing machine learning, pattern recognition and information retrieval techniques.

Prabir Bhattacharya is a Professor and a Canada Research Chair Tier 1 at the Concordia Institute for Information Systems Engineering (CIISE), Concordia University, Montreal. Before moving to Montreal in 2004, he worked in USA for 18 years. He received his Ph.D. from the University of Oxford, UK and completed his undergraduate education from the University of Delhi, India. He is a Fellow of the IEEE, and the IAPR. He is the Associate Editor-in-Chief of the IEEE Transactions on Systems, Man and Cybernetics, Part B (Cybernetics). Also, he is an associate editor of five other journals. He holds two US Patents, 7 Japanese Patents, and has co-authored over 160 publications including 85 journal papers.

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