Foreword

Recently there has been growing interest in "Biometrics," which deals with the study of computer emulation, analysis, and synthesis of human behavior that is related to the human body. It has many significant applications in solving daily problems, including personal verification and identification, analysis and recognition of handwriting, signature, fingerprint, voice, speech, palm and iris, and cybersecurity. This is particularly important in national security, especially after the 911 tragedy at New York's World Trade Center. Like the famous doctors' saying, "It is more important to prevent illness beforehand than healing it afterwards," many believe that if we had good enough "biometrics" system to prevent those "terrorists" from entering the USA, there would have been no 911 tragedy.

I am pleased to see that there is a new book coming out in this field, by renowned Prof. Marina L. Gavrilova at University of Calgary, Canada, to be published by the IGI Global Publisher. I have met Prof. Gavrilova while I was visiting Biometric technology lab at the University of Calgary as iCORE (Informatics Circle of Research Excellence), and have been quite impressed by her work on "Emotion Analysis and Recognition."

This book covers a rather wide range of "Biometrics," both in fundamental theories and practical applications, including its overview, relation to Artificial Intelligence (AI) and Pattern Recognition (PR), Image Processing (IP), and Neuron Networks, Biometrics Systems, Current Practice in Information Fusion and Multimodal Biometrics, Trend, Fuzzy Fusion Biometrics, and finally Applications in Security Systems and Robotics.

I am particularly impressed by its skillfully designed AI technique-decision making system for biometrics verification and identification including "Face," Ear," and "Iris" multi-modal biometric information fusion system, using Markov Chain and Fuzzy logic. It makes the system more intelligent (smart) and can enhance recognition accuracy rate.

In its final chapter of conclusions and future directions, there are many exciting topics as future research for MS or PhD level graduate students.

Overall, I think this book is good for researchers and professionals who are interested in Biometrics, and for senior undergraduate and graduate students at both MS and PhD levels. It can serve as a good textbook as well as a research reference.

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