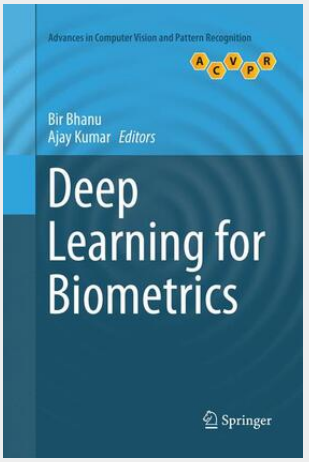
Kumar / Bhanu

Deep Learning for Biometrics



This timely text/reference presents a broad overview of advanced deep learning architectures for learning effective feature representation for perceptual and biometrics-related tasks. The text offers a showcase of cutting-edge research on the use of convolutional neural networks (CNN) in face, iris, fingerprint, and vascular biometric systems, in addition to surveillance systems that use soft biometrics. Issues of biometrics security are also examined. Topics and features: addresses the application of deep learning to enhance the performance of biometrics identification across a wide range of different biometrics modalities; revisits deep learning for face biometrics, offering insights from neuroimaging, and provides comparison with popular CNN-based architectures for face recognition; examines deep learning for state-of-the-art latent fingerprint and finger-vein recognition, as well as iris recognition; discusses deep learning for soft biometrics, including approaches forgesture-based identification, gender classification, and tattoo recognition; investigates deep learning for biometrics security, covering biometrics template protection methods, and liveness detection to protect against fake biometrics samples; presents contributions from a global selection of pre-eminent experts in the field representing academia, industry and government laboratories. Providing both an accessible introduction to the practical applications of deep learning in biometrics, and a comprehensive coverage of the entire spectrum of biometric modalities, this authoritative volume will be of great interest to all researchers, practitioners and students involved in related areas of computer vision, pattern recognition and machine learning.

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