**ICB2019 Special Session Proposal on**

**Large-Scale Soft Biometrics**

Soft biometrics, such as gender, skin color, height, ethnicity, gait, action, and tattoo, are physiological and behavioral characteristics that provide not necessarily unique but semantic interpretation about an individual. Such soft biometric attributes offer middle-level characteristics of a person to bridge the gap between low-level machine features and high-level human descriptions. The produced middle-level characteristics are particularly useful in large-scale biometric identification applications, such as human-machine interaction, visual tagging/indexing, and person re-identification. In the last several years, deep learning methods have demonstrated great success for learning discriminative feature representation. However, in order to handle the data with noise and large intraclass variations, the large amounts of training data are essential for deep learning methods. Thus, deep learning method for soft biometric learning and recognition from big data has become a very active inter-disciplinary research area, involving computer vision, machine learning and biometrics. The goal of the special session is to disseminate recent research findings for researchers on a focused platform, discuss how deep learning methods can benefit the field of large-scale biometrics, and explore potential collaborations.

Papers addressing soft biometrics and related topics based on deep learning are invited. The topics include, but are not limited to:

* Recognition on age, gender, ethnicity, hair color, etc.
* Soft biometric feature extraction
* Soft biometric feature evaluation
* Soft biometric feature reduction and classification
* Soft biometric system
* Studying the reliability of soft biometric characteristics
* Soft biometric information capture system
* Databases for evaluating methods on soft biometric
* Soft biometric security classification
* Novel soft biometric traits
* Fusion of primary and soft biometric information
* Application of soft biometric

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Biography: Haibin Yan is currently an Associate Professor with the School of Automation, Beijing University of Posts and Telecommunications, Beijing, China. She received the B. Eng. and M.Eng degree from the Xi’an University of Technology, and the Ph.D degree from the National University of Singapore, in 2004, 2007 and 2013, respectively. Her current research interests include computer vision and service robotics. She has authored/co-authored over 20 scientific papers in these areas in some international journals and conferences such as IEEE T-CYB, T-IFS, PR, PRL, ICRA and VCIP. She serves as a reviewer for some international journals and conference such as IEEE T-PAMI, T-TIP, T-CSVT, T-IFS, PR, PRL, ICME and VCIP. She is a member of the IEEE.

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Biography: Qijun Zhao is currently an associate professor in the College of Computer Science at Sichuan University. He obtained his B.Sc. and M.Sc. degrees in computer science both from Shanghai Jiao Tong University, and his Ph.D. degree in computer science from the Hong Kong Polytechnic University. He worked as a post-doc research fellow in the Pattern Recognition and Image Processing lab at Michigan State University from 2010 to 2012. His research interests lie in biometrics, particularly, fingerprint recognition, face perception and affective computing, with applications to forensics, intelligent video surveillance, mobile security, healthcare, and human-computer interactions. Dr. Zhao has published more than 60 papers in academic journals and conferences, and participated in many research projects either as principal investigators or as primary researchers. He served as a program committee co-chair in organizing the 11th Chinese Conference on Biometric Recognition (CCBR 2016) and the 2018 IEEE International Conference on Identity, Security and Behavior Analysis (ISBA 2018), and an area co-chair for the 9th IEEE International Conference on Biometrics: Theory, Applications, and Systems (BTAS 2018). He is a member of the IEEE.