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# Biometric Recognition

14th Chinese Conference, CCBR 2019 Zhuzhou, China, October 12–13, 2019 Proceedings



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#### **Preface**

Reliable recognition of person identity has a number of applications in modern society. Biometric technology, which performs automatic person recognition based on biological or behavioral traits, provides substantial advantages over traditional password- or token-based solutions. In recent years, biometric recognition systems have been extensively deployed worldwide in law enforcement, government, and consumer applications. In China, thanks to the huge population using the Internet and smart phones as well as to the great investment of the government in security and privacy protection, the biometric market is rapidly growing and biometric research has attracted the attention of numerous scholars and practitioners. These researchers have been addressing various scientific problems in biometrics, developing diverse biometric techniques, and making significant contributions to the biometrics field. The Chinese Conference on Biometric Recognition (CCBR), an annual conference held in China, provides an excellent platform for biometric researchers to share their progress and thoughts in the development and applications of biometric theory, technology, and systems.

CCBR 2019 was held in Zhuzhou during October 12–13, 2019, and was the 14th in the series, which has been successfully held in Beijing, Hangzhou, Xi'an, Guangzhou, Jinan, Shenyang, Tianjin, Chengdu, Shenzhen, and Urumqi since 2000. CCBR 2019 received 74 submissions, each of which was reviewed by at least two experts from the Program Committee. Based on the rigorous review process, 56 papers were selected for presentation. These papers comprise this volume of the CCBR 2019 conference proceedings, which covers a wide range of topics: face recognition and analysis; hand-based biometrics; eye-based biometrics; gesture, gait, and action; emerging biometrics; feature extraction and classification theory; and behavioral biometrics.

We would like to thank all the authors, reviewers, invited speakers, volunteers, and Organizing Committee members, without whom CCBR 2019 would not have been successful. We also wish to acknowledge the support of the Chinese Association for Artificial Intelligence, Institute of Automation of Chinese Academy of Sciences, Springer, and Hunan University of Technology for sponsoring this conference.

October 2019

Yimin Tan Jie Zhou Yunhong Wang Zhenan Sun Ran He Jianjiang Feng Shiguang Shan Zhenhua Guo

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