

**Title:**

Biometrics Application and Forensics Security

**Abstract:**

Biometrics are people's internal attributes, which have high stability and individual difference. Thus, it is a natural choice to apply human biometrics to computer network security and identity authentication. Face, iris, voice and other biometric recognition technology has been widely used in smart phones, financial payment, public security, justice, smart city and other fields, and has become one of the most important application directions in the field of artificial intelligence.

Biometrics are pretty accurate, but they're not totally reliable. Throughout the history of hacking, determined attackers have always found ways to copy, steal or bypass the verification factors they need. If we rely solely on biometrics, we will again encounter the same problems we experienced with password authentication. And in the case of biometric authentication, if your fingerprints or facial features are stolen, you can no longer use them for authentication. Furthermore, with the rapid development of deep learning, biometric feature generation technology based on generation model has been developed rapidly in recent years, and has the ability to generate virtual image, audio and video data that does not exist in reality, but the content is realistic and natural. Faced with these problems, the biometric systems may not be able to identify it properly due to injuries or stains on the user's body, resulting in the failure of legitimate users to log in. Therefore, how to protect biometric data and identify virtual biometric data is a new problem faced by biometric technology.

In the future, biometrics will play an important role in identity authentication. However, no authentication token is impregnable. Rather than relying entirely on some new advanced biometric technology, the most secure approach is to implement multi-factor authentication using more than one factor to participate in the authentication process.

**Scope and Topics:**

We encourage researchers to formulate innovative learning theories, feature representations, and end-to-end biometric application systems based on deep learning. We also encourage new theories and processes for dealing with large scale biometric datasets through deep learning architectures. We are soliciting original contributions that address a wide range of theoretical and practical issues including, but not limited to:

- ✧ Quality evaluation and enhancement of biometric signal
- ✧ AI Security - Adversarial Attack and Defense
- ✧ Steganography and steganalysis based Biometrics
- ✧ Biometric emotion computing



- ✧ Pedestrian recognition
- ✧ Face recognition, forgery and detection
- ✧ Fingerprint recognition, forgery and detection
- ✧ Iris recognition and forgery
- ✧ Gait recognition
- ✧ Other biometric recognition, forgery and detection
- ✧ Multimodal biometric recognition and information fusion
- ✧ Biometric database construction and synthesis
- ✧ Anti-counterfeiting and security of biometric identification system
- ✧ Evaluation and application of biometric identification system

### **Program Committee Chairs:**

**Chengsheng Yuan**, Nanjing University of Information Science and Technology, China

Email: ycs\_nuist@163.com

Chengsheng Yuan received his Ph.D. degree at Nanjing University of Information Science and Technology in 2019. He was a visiting scholar with the University of Windsor, CA, from 2017 to 2019. He is currently an associate professor with the School of Computer and Software, Nanjing University of Information Science and Technology, China. He was also a postdoctoral fellow with University of Windsor, Canada. His research interests include bioinformatics, multimedia forensic and Information Hiding.

**Xiaolong Li**, Beijing Jiaotong University, China

Email: lixl@bjtu.edu.cn

Xiaolong Li received the B.S. degree from Peking University, China, in 1999, the M.S. degree from Ecole Polytechnique, France, in 2002, and the Ph.D. degree in mathematics from ENS de Cachan, France, in 2006. He was a Post-Doctoral Fellow and a Researcher with Peking University from 2007 to 2016. He is currently a Professor with the Institute of Information Science, Beijing Jiaotong University, Beijing, China. His research interests are reversible information hiding, steganography and steganography analysis, digital watermarking and digital forensics.

**Wenbo Zhou**, University of Science and Technology of China, China

Email: welbeckz@ustc.edu.cn

Wenbo Zhou received his B.S. degree in 2014 from Nanjing University of Aeronautics and Astronautics, China, and Ph.D. degree in 2019 from University of Science and Technology of China, where he is currently postdoctoral researcher. He is a Leader of Youth Working Group of Digital Media Forensics and Security Committee. He was a Research Intern in City Brain Lab in Alibaba DAMO Academy from 2018 to 2019. His research interests include information hiding and AI security.

**Yimin Yang**, Lakehead University, Canada

Email: yyang48@lakeheadu.ca



Yimin Yang received his Ph.D degree in College of Electrical and Information Engineering, Hunan University, China. He is currently an Assistant Professor in the Department of Computer Science at the Lakehead University, Ontario, Canada. He is also a Faculty Affiliate at the Vector Institute, Toronto, Canada. From 2014-2018, He was a Postdoctoral Fellow in the Centre of Computer Vision and Deep Learning at the University of Windsor, Ontario, Canada. His research interests are in Machine Learning, Neural Networks and Signal Processing.

**Thangarajah Akilan**, Lakehead University, Canada

Email: takilan@lakeheadu.ca

T. Akilan received his Ph.D. degree in Electrical and Computer Engineering from University of Windsor, Windsor, Ontario, Canada. He is currently an Assistant Professor with the Department of Software Engineering, Lakehead University, Thunder Bay, ON, Canada. His research interests include object/action recognition, image/video processing and segmentation, and data fusion using statistical techniques, machine/deep learning, and natural language processing.

### **Program Committee:**

Zhihua Xia, Nanjing University of Information Science and Technology, China

TianLei Wang, Hangzhou Dianzi University, China

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