Applied Computational Intelligence and Soft Computing

Special Issue on

Machine Learning Algorithms in Biometric Applications

CALL FOR PAPERS

The applications of biometrics are often based on the verification and identification of problems that have been widely applied in real-life systems like attendance management, financial payment, access control, and so on. The success of the applications depends on the quality of input images from devices. However, the surveillance or forensic systems often do not have the sufficient performance because the input images have poor quality or damage to the recording. This is a challenging problem for traditional approaches that only use image feature representation to achieve good performance. In such cases, data-driven approaches have attracted research activity and effort from the biometrics community to overcome the issues. One of the most popular methodologies of the data-driven approaches that are applied in order to have a robust biometrics system is machine learning algorithms.

Machine learning algorithms, like K-nearest neighbors, deep neural networks, support vector machines, image feature representation, evolutionary computation, and so on, represent a novel methodology to solve the complex problems for biometric applications. In practical applications, the challenging problems that a biometric system cannot solve are based on strict requirements from support devices or theoretical assumptions. In those cases, the data-driven approaches with the machine learning algorithms could be feasible solutions.

This special issue aims to facilitate and support research related to the field of applying data-driven approaches in biometric applications, providing an international forum for professionals, engineers, and researchers, and welcomes work that presents state-of-the-art research results.

Potential topics include but are not limited to the following:

- Machine learning for biometrics
- Biometric features
- Fuzzy and artificial neural network-based learning techniques in biometrics
- Multiple and multimodal biometric fusion techniques
- Face surveillance and monitoring
- Deep learning for biometrics recognition
- Multiple biometrics theories and applications
- Integration with biometric data to precision person identification

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Lead Guest Editor
Thai H. Le, University of Science, Ho Chi Minh, Vietnam
lhthai@fit.hcmus.edu.vn

Guest Editors
Hoang T. Van, Ho Chi Minh University of Technology, Ho Chi Minh, Vietnam
vthoang@hcmhutech.edu.vn

Thanh-Toan Do, University of Liverpool, Liverpool, UK
thanh-toan.do@liverpool.ac.uk

Tam V. Nguyen, University of Dayton, Dayton, USA
tamnguyen@udayton.edu

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