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Special Section: Call for Papers

Announcing a Special Section in **IEEE *Access***:

Applying Four D's of Machine Learning to Advance Biometrics

Submission Deadline: August 31, 2015

IEEE *Access* invites manuscript submissions in the area of **Applying Four D's of Machine Learning to Advance Biometrics: Deep Learning, Dictionary Learning, Domain Adaptation, and Distance Metric Learning**.

With the availability of inexpensive biometric sensors, computing power, and memory, it is becoming increasingly clear that biometrics technology will have broader usage, and therefore also broader scope of future research in addressing newer challenges and pushing the boundaries. If we perceive biometrics as a fundamental problem in science and engineering with broad economic and scientific impact, then designing efficient algorithms and systems will require a multidisciplinary effort in signal processing, pattern recognition, machine learning, sensor design, embedded systems, and information fusion. Recent advances in machine learning have seen widespread development of algorithms in four specific areas: deep learning, dictionary learning, domain adaptation, and distance metric learning. As a consumer of these 4-D paradigms, the likelihood of exploring new avenues of research is immense.

This Special Section in IEEE *Access* focuses on bringing together researchers and practitioners in biometrics and machine learning to showcase the progress, algorithms, and applications of deep learning, dictionary learning, domain adaptation, and distance metric learning in biometrics. Topics appropriate for this special issue include (but not necessarily limited to):

1) Novel feature representation using deep learning, dictionary learning for face, fingerprint, ocular, and/or other biometric modalities
2) Novel algorithms for heterogeneous biometric recognition such as (a) matching visible images to near-infrared images, (b) matching cross-resolution images, and (c) matching sketches with digital face images
3) Novel algorithms for transferring knowledge from one biometric domain to another, including transfer learning and other semi-supervised learning algorithms
4) Novel distance metric learning algorithms for biometrics modalities
5) Applications of these paradigms in biometric systems

We highly recommend the submission of multimedia with each article as it significantly increases the visibility and usage of articles.

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