SOFA 2016: Special Session Proposal
Soft Computing & Fuzzy Logic in Biometrics (SCFLB)

Chairs: Valentina E. Balas & Nicolaie Popescu-Bodorin

The SCOPE

The aim of this special session is to present interdisciplinary state-of-the-art results in the fields of Biometrics and Fuzzy Logic and to get together researchers that are active in these two areas.

The PERSPECTIVE

In short, since the partitioning of comparisons space in *genuine*, *imposter* (and eventually *undecidable* pairs) is *f-granular*, giving a biometric decision using today's state-of-the-art biometric systems means, in fact, giving a *fuzzy biometric decision*. In a simplified view, the cumulatives of the imposter and genuine score distributions are the fuzzy indicators of the two (or three) f-granules, whereas the point of equal error define a defuzzification in which the security risks (expressed as False Accept Rate) and user comfort risks (expressed as False Reject Rate) are balanced. When speed-precision balance is at stake, regardless the biometric traits used in today's state-of-the-art biometric systems, analyzing biometric decision with fuzzy instruments and processing the biometric data with illustrates the direct connection and causality between imprecision and speed in defining digital identity – on the one hand, and the security or comfort risks assumed in these systems – on the other. From this perspective, the special session aims to provide an opportunity for international researchers in the field of Biometrics, Soft Computing and Fuzzy Logic to **share their original work** or/and **review the recent advances** in better defining the fuzzy biometric digital identity toward minimizing the security risks and comfort risks. Submissions reflecting both new theoretical advances and new highly experimental works using the largest publicly available biometric databases are especially encouraged.

The TOPICS

Suggested topics of **SCFLB** special session include but are not limited to
- Fuzzy techniques for **iris** / **palm** / **face** / **eye** / **ear** / **fingerprint** / **behavioral**:
    - **detection;**
    - **segmentation;**
    - **understanding (essential features detection / definition);**
    - **encoding;**
    - **template matching;**
    - **template classification;**
- Fuzzy scoring schemes for:
    - **multi-sample based biometric systems;**
    - **multi-classifier fusion in biometrics;**
    - **multi-biometrics fusion;**
- Crisp/Fuzzy Biometric Theory and Practice:
    - **Aging,**
    - **Verification,**
    - **Identification,**
    - **Fusion,**
    - **Fuzzy Extractors,**
    - **Fuzzy Vaults,**
All of the above topics are considered for both online and offline biometric systems, as appropriate.

Program Committee:

President: Adrian Stoica (NASA Jet Propulsion Laboratory, Pasadena, CA, USA);
Vice-President: José Salvador Sánchez Garreta (Dept. de Leng. y Sist. Informáticos, Univ. Jaume I, ES);

SOFA 2016: Special Session Proposal
Soft Computing & Fuzzy Logic in Biometrics (SCFLB)

Chairs: Valentina E. Balas & Nicolaie Popescu-Bodorin

Members:

Zahid Akhtar (University of Udine, Italy);
Grigore Albeanu (Computer Science Department, University of Bucharest, RO);
Patrick Bours (Gjøvik University College, Norway);
Denis Enachescu (Computer Science Department, University of Bucharest, RO);
Meryem Erbilek (School of Engineering and Digital Arts, University of Kent, UK);
Paulo Fazendeiro (Computer Science Department, University of Beira Interior, PT);
Hugo Pedro Proença (Computer Science Department, University of Beira Interior, PT);
Alberto de Santos Sierra (Hewlett-Packard Spain, ES);
Konstantinos Sirlantzis (School of Engineering and Digital Arts, University of Kent, UK);
Shan Suganthan (Smart Sensors Ltd, UK);
Bozhao Tan (Amazon Web Services, Amazon, USA);
Jianguo Wang (MorphoTrak, USA);

Secretary & Publicity Chairs:

Cristina Noaica (Computer Science Department, University of Bucharest, RO),
Iulia Motoc (School of Engineering and Digital Arts, Kent University, UK),
Silvio Filipe (Soft Computing & Image Analysis Lab., University of Beira Interior, PT)
Patricia Penariu (Computer Science Department, University of Bucharest, RO)

Other data

Deadline for initial paper submission: 20 May, 2016.
Deadline for final paper submission and early payment: 22 July, 2016.
Review: 5-10 July, 2016.
Word template (Springer format): http://sofa2016.org/subm.php
Paper submission: http://sofa2016.org/subm.php (online system) & bodorin@ieee.org (backup copy)
Conference proceedings publisher: Springer Verlag: http://sofa2016.org/subm.php
Conference fees: http://sofa2016.org/auto.html
Registration: http://sofa2016.org/registration.php
Best Student Paper Competition Available: http://sofa2016.org/best.html
Selection for Expended Journal Articles Available: http://sofa2016.org/subm.php
Travel: http://sofa2016.org/trav.html
Accomodation: http://sofa2016.org/acco.html
Contact: for any questions, please contact: Nicolaie Popescu-Bodorin (bodorin@ieee.org), V. E. Balas (balas@drbalas.ro).

Valentina E. Balas, PhD. Eng. in Automation,
IEEE Senior Member, Professor of Engineering, Head of
Intelligent Systems Laboratory, "Aurel Vlaicu" University of
Arad, ROMANIA, Member of BISC, AMS, ACM, IEEE,
EUSFLAT, IFSA, Joint Secretary of the Governing Council of
Forum for Interdisciplinary Mathematics (FIM, India)
https://ro.linkedin.com/in/vabalas , +0040-740-059151
http://www.drbalas.ro/valentina-emilia

Nicolaie Popescu-Bodorin, PhD in Comp. Sci.,
IEEE Senior Member, Lecturer, Head of Applied Computer
Science Testing Laboratory, University of S-E Europe LUMINA,
Bucharest, ROMANIA, Member of BISC, AMS, ACM, IEEE and
IEEE Biometrics Council
http://ro.linkedin.com/in/bodorin/ , + 40 722882471 ,
http://lmrec.org/bodorin/