The International Workshop on Biometrics (BIOMET'2014), June 23-24, 2014, Sofia

The International Workshop on Biometrics BIOMET'2014 was planned and carried out in the frames of the AComIn project of IICT-BAS following the objective to disseminate recent advances in Biometrics among the research groups and companies in Bulgaria and Balkan countries as well.

The Workshop was held as a 2 days research event on 23-24th of June, 2014, in the main campus of BAS in Sofia. Besides of the team of IICT, an essential role in the Workshop organization played also our AComIn partner, the Computer Vision and Multimedia Lab (CVML) of the University of Pavia (UNIPV), Italy; Prof. Virginio Cantoni, the Director of CVML, was a co-chairman of BIOMET. They are also appreciated the valuable activities of key members of the European COST Action IC1106 (Integrating Biometrics and Forensics for the Digital Age) as reviewers or invited lecturers, including Prof. Massimo Tistarelli, the IC1106 Chairman. Another scientific community that cooperated was the Technical Committee on Biometrics of the GIRPR (Group of Italian Researchers in Pattern Recognition) assured the best student paper award of the Workshop

BIOMET-2014, as the 1st International Workshop on Biometrics in South-East Europe, was intended to provide a forum to present the current work and new ideas in this challenging field having in mind the long time interest and traditions in Biometrics among the research community in the region. At the same time, BIOMET-2014 was primarily connected with the AComIn goals of IICT-BAS to specify the local status quo and to disseminate recent European advance of Biometrics, in this way to bridge among the research groups and companies in the country and near abroad. For these reasons, the Workshop Call-for-papers document covered a majority in Biometrics areas (numbering 12 but not limited to), as well as the plenary lecturers preliminary announced and invited to the Workshop were selected optimally covering this plan.

Thus, the Workshop promoted a pilot phase of four invited lectures, from renowned world experts on the state of the art of the Workshop's main thematic, and suggesting possible synergies between different modalities and strategies, stressing links and outlining open questions. In detail, the four basic lectures were given as follows by, Mark Nixon ("On Semantic Soft-Biometric Labels"), Andrzej Drygajlo ("From Speaker Recognition to Forensic Speaker Recognition"), Massimo Tistarelli ("Biometrics in Forensic Science: Challenges, Lessons and New Technologies"), and Chang-Tsun Li ("People Identification and Tracking Through Fusion of Face and Gait Features"). Nevertheless of lecturers are well known names of Biometrics community worldwide it is worth to report also their affiliations with four famous European institutions, namely: the University of Southampton, UK; the Swiss Federal Institute of Technology, Lausanne, Switzerland; the University of Sassari, Alghero, Sassari, Italy; and the University of Warwick, Coventry, UK.

Besides the shared invited advance, seven special sessions were organized in conjunction with the workshop submissions in order to fathom a few selected topics of current interest, namely: Gait and behavior analysis; Iris analysis and eye tracking; Voice recognition and speech analysis; 3D ear recognition; Face and facial attributes analysis; Handwriting and signature recognition; Multimodal and soft biometrics. These sessions were associatively distributed among the invited lectures.

The Workshop raised considerable interest among researchers from different fields of Biometrics and/or interdisciplinary of it. Besides the four invited papers, further 17 papers were presented at the Workshop, and the number of participants and listeners topped 30, half of them from Bulgaria (not only from IICT, but also from other institutes of BAS, two Universities and two companies in Sofia), as well as from Italy, the UK, Cyprus, Finland, Saudi Arabia, etc. A paper from Iran was also presented in absentia. For young participants in the Workshop, the GIRPR offered a best student paper award (a diploma and 500,00 € cash award)to promote their contributions, give them opportunities to interact with senior colleagues, and sustain the BIOMET initiative. The award was conferred on Atanas Nikolov, a PhD student in the IICT-BAS for presentation of his paper in collaboration, entitled "3D ear analysis by an EGI representation".

The Workshop Program Committee numbered 14 people, a majority of them members of the European COST Action IC1106 from Italy, Germany, United Kingdom, Spain, and Croatia, as well as 7 specialists from Bulgarian Universities, companies, and BAS. After an intense and careful reviewing

process (by the Program Committee and both the co-chairmen as well), 17 regular papers were accepted (on the principle of 3 reviews per paper) and were appropriately assigned for presentation in the 7 sessions of the Workshop, in both the Workshop days. The Workshop sessions were alternatively co-chaired by both the Workshop chairmen. In accordance with the Workshop Program, they both assured an hour (60 min) to each invited lecturer, and 25 minutes to regular speakers, for both − presentation & discussions. Really, discussions often continued in the coffee-breaks and beyond, especially after the invited lectures and some regular presentations as well.

All the 21 papers presented (invited and regular ones) were accepted for inclusion in the Post-Proceedings of BIOMET'2014 that are going to appear (published with Springer) as a LNCS volume entitled "Biometric Authentication", in Virginio Cantoni, Dimo Dimov, and Massimo Tistarelli (Eds.), up to the end of 2014. We fixed the dead-line of 31th of July, 2014, for camera-ready-form submission of all the final papers − 4 invited and 17 regular ones. The final composition of the Proceeding is envisaged for about a few days after this dead-line. The volume is expected of about 250-260 pages; 50 books are ordered for publishing.

The Workshop did take place in the main campus of BAS, in the Hotel "Dom na Uchenia" (Scientific house), 50 "Shipchenski Prohod" Blvd, 1113 Sofia. The local organization of the Workshop that started in the very beginning of 2014, was generally hold by the IICT people of the Signal Processing and Pattern Recognition Department, in this number Assoc. Prof. Dimo Dimov, also the Workshop co-chairman.

The Workshop have been made possible through the generous financial support from the AComIn project side that includes almost all expenses of BIOMET'2014, not coverable by the gathered participation fees, including total costs for travel and accommodation of the 4 invited speakers.

The Workshop has been opened by a welcome minutes of Prof. Svetozar Margenov, the Director of IICT-BAS, who introduced the mission of IICT, and of BAS, as well as their roles in research-development-and-innovation process in the country. Next key minutes about the AComIn project of IICT were given by Prof. Galia Angelova, the Coordinator of the AComIn project.

In Workshop closing session (in the 2d day late afternoon), both co-chairmen greeted all the participants for their active work for the Workshop success. Simultaneously a merited gratitude has been given to the Program Committee members for reviewing the submitted papers as well as to the invited lecturers for their suggestions during the Workshop. Besides of the names already mentioned, particular appreciations went also to Dr. Mauro Mosconi, from CVML, for the BIOMET'2014 logo design; to Alessandra Setti (the Workshop secretary from CVML) for managing the process of communication with authors and reviewers, and for keeping up the BIOMET'2014 site; to the administration of IICT-BAS as well as all those who helped in the organization and gave hospitality to the Workshop.

Finally, it has been heralded also a general opinion formed in the two days passed that the next issue of the BIOMET Workshop is better not delayed more than 2-3 years, and to relieve the cost, to be held under the auspices of any international ICT conference visible in the country and abroad.

The Workshop should be considered a contribution to the general objective "Progress beyond the State of the Art" of the AComIn project, and more precisely to its area 5 - "3D Modelling and Recognition in Biometrics". The Workshop contribution can also be assigned to the research priority area III (Signal and image processing) and the work package WP3 (Networking with leading EU partners) of AComIn.

Papers of **BIOMET'2014** authored by IICT scientists

1. **Noisy speech endpoint detection using MD feature**, by Atanas Ouzounov (*IICT-BAS, Sofia, Bulgaria*)
2. **Appearance-based 3D object approach to human ears recognition**, by Dimo Dimov (*IICT-BAS, Sofia, Bulgaria*), Virginio Cantoni (*Univ. of Pavia, Italy*)

3. **3D ear analysis by an EGI representation**, by Virginio Cantoni (*Univ. of Pavia, Italy*), Dimo Dimov (*IICT-BAS, Sofia, Bulgaria*), Atanas Nikolov (*IICT-BAS, Sofia, Bulgaria*)
4. **Neural network and kNN classifiers for on-line signature verification**, by Desislava Boyadzieva, Georgi Gluhchev (*IICT-BAS, Sofia, Bulgaria*)

The Best Paper Award of BIOMED'2014 was given to Atanas Nikolov, a PhD student at IICT-BAS.