



Summary information on the 16th edition of the Int.I Summer School on Biometrics co-organised with COST Action CA16101

- **The name of the summer school:** The 16th Int.I Summer School on Biometrics
<http://biometrics.uniss.it>
- **The specific focus for the current offering:** Biometrics and Forensic Science in the Deep Learning Era
- **The dates and location:** May 27th to 31th 2019, Alghero, Italy
- **A brief summary of the school's intent, organization, scope, and motivation:**

From the early days, when security was the driving force behind biometric research, today's challenges go far beyond security. Machine learning, Image understanding, Signal analysis, Neuroscience, Forensic science, Digital forensics and other disciplines, converged in a truly multidisciplinary effort to devise and build advanced systems to facilitate the interpretation of signals recorded from individuals acting in a given environment. This is what we simply call today "Biometrics".

For the last fifteen years, the International Summer School on Biometrics has been closely following the developments in science and technology to offer a cutting edge, intensive training course, always up to date with the current state-of-the-art.

What are the most up-to-date core biometric technologies developed in the field? What is the potential impact of biometrics in forensic investigation and crime prevention? How to detect impersonation attacks and disguise? What can we learn from human perception? What is a *biometric recognition system*?

This school follows the successful track of the International Summer Schools on Biometrics held since 2003. In this 16th edition, the courses will mainly focus on new and emerging issues:

- **How Biometrics can deal with emerging applications;**
- **How to exploit new biometric technologies in forensic and security applications;**
- **Evaluation and assessment of biometric and forensic applications.**
- **Biometrics, Forensic identification and deep learning: What is next?**

The courses provide a clear and in-depth picture on the state-of-the-art in biometric verification/identification technology, both under the theoretical and scientific point of view as well as in diverse application domains. The lectures will be given by 18 outstanding experts in the field, from both academia and industry.

An advanced feature of this summer school will be some practical sessions to better understand, "hands on", the real potential of today's biometric technologies.

The school will be held in conjunction with the International Conference on Biometrics (ICB 2019 - <http://www.icb2019.org>)

Prof. Massimo Tistarelli

Director

Computer Vision Laboratory

Dipartimento di Ingegneria dell'Informazione

Viale Italia, 39, 07100 Sassari, Italia

T + 39 320 9234042 F + 39 079 9720420 E tista@uniss.it I www.uniss.it

- **The expected number of participants:** 50 participants from different countries. In the last edition, we had the following participation from the following 19 different countries (in brackets are the number of participants from this country, if greater than one):
Australia, Brazil (4), China, Cuba (2), Czech Republic (2), Finland, Germany (2), India, Israel (2), Italy (14), Malaysia, Mexico, Netherlands (3), Norway (2), Poland, Russia (2), Sweden, United Kingdom (3), UAE, USA (3).
- **How the course will be promoted and advertised:** Advertisement will be made through general and dedicated mailing lists, leaflets will be distributed at the major conferences (BTAS, ICCV, ICB), the school web site and search engines, cross-link with related conferences (BTAS 2018/FG 2019).

16th Int.l Summer school for advanced studies on biometrics: Biometrics and Forensic Science in the Deep Learning Era

May 27-31 2019
COURSE SCHEDULE

	9:00 - 9:15	9:15 - 10:45	Coffe break	11:00 - 12:30	Lunch break	14:30 - 16:00	Coffe break	16:30 - 18:00	19:30 - 20:00	21:00 - 22:00	
	Chair: Massimo Tistarelli					Chair: Arun Ross				Chair: Thirimachos Bourlai	
Monday May 27	Massimo Tistarelli Opening	Tomaso Poggio (Massachusetts Institute of Technology, USA) Keynote		Arun Ross (Michigan State University, USA) Introduction to Biometrics in Forensic Applications	12:30 - 14:30	Alessandro Verri (University of Genova, Italy) Machine Learning for Biometrics		Massimo Tistarelli (University of Sassari, Italy) Face Recognition	Welcome reception	Meeting the Lecturers: Doctoral Consortium - Animated by TBD	
	9:00 - 10:30		Coffe break	10:45 - 12:15	Lunch break	14:30 - 16:00	Coffe break	16:15 - 17:45	17:30 - 18:30	18:30 - 19:30 / 21:00-22:00	
	Chair: Davide Maltoni					Chair: Mark Nixon				Chair: Arun Ross	
Tuesday May 28	Davide Maltoni (University of Bologna, Italy) Fingerprint Recognition			Mark Nixon (University of Southampton, UK) Soft Biometrics	12:30 - 14:30	Thirimachos Bourlai (West Virginia University, USA) Practical Biometric Systems and Project Session 1		Tal Hassner (Open University, Israel and Amazon, USA) Deep Learning Techniques for Biometrics	Student presentations	Meeting the Lecturers: Topic 1 - Animated by TBD	
	9:00 - 10:30		Coffe break	10:45 - 12:15	Lunch break	14:30 - 16:30	Coffe break	17:00 - 18:00			
	Chair: Alice O'Toole					Chair: John Mason					
Wednesday May 29	Jonathon Phillips (NIST, USA) Challenges in Face Recognition and Visual Biometrics			To be announced (--) Iris Recognition	12:30 - 14:30	Alice J. O'Toole (University of Texas, USA) Biological Recognition of Human Bodies		Ida Gobbini (Dartmouth College, USA) Mechanisms for Recognition of Familiar Faces	James Haxby (Dartmouth College, USA) Commonality of the fine-grained structure of neural representations across brains	Visit to Alghero and Gala dinner (20:00) BUS LEAVES AT 18:45	
					Lunch break	14:30 - 15:30	Coffe break	15:45 - 17:00	17:00 - 18:00	18:30 - 19:30 / 21:00-22:00	
						Chair: Jonathon Phillips				Chair: Didier Meuwly	
Thursday May 30	Boat trip on Capo Caccia bay or other leisure activities				13:00 - 14:30	Chang-Tsun Li (University of Warwick, UK) Multimedia Forensics and the EU IDENTITY Project		John Mason (University of Swansea, UK) Speaker Recognition	Industrial Lecturer (Safran Morpho, France) Exploiting Biometrics: an Industrial Perspective	Meeting the Lecturers: Topic 2 - Animated by TBD	
	9:00 - 10:30		Coffe break	10:45 - 12:15	Lunch break	14:00 - 15:00	Coffe break	15:30 - 16:30	16:30 - 17:15		
	Chair: Chang-Tsun Li					Chair: Enrico Grosso					
Friday May 31	Vishal Patel (Rutgers University, USA) Continuous Authentication in the Mobile World			Didier Meuwly (Netherlands Forensics Institute, Netherlands) The Quantification of Forensic Evidence	12:30 - 14:00	Thirimachos Bourlai (West Virginia University, USA) Practical Biometric Recognition Systems and Project Session 2		Emilio Mordini (Responsible Technology, France) Ethics and Governance of Global ID	Massimo Tistarelli (University of Sassari, Italy) Concluding remarks		