

## SIBGRAPI 2016

### Workshop on Face Processing Applications: Biometrics and Beyond São José dos Campos, São Paulo, Brazil, October 6th 2016

#### Important Dates:

Paper submission deadline (**extended**): ~~August 1<sup>st</sup> 2016~~ **August 15<sup>th</sup> 2016**.

Notification of acceptance (**extended**): ~~August 26<sup>th</sup> 2016~~ **September 2<sup>nd</sup> 2016**.

Camera-ready due (**extended**): ~~September 2<sup>nd</sup> 2016~~ **September 9<sup>th</sup> 2016**.

#### Call for Papers:

Faces are visual patterns that can be easily perceived and recognized by humans. However, the computational representation and modeling of such apparently natural and heritable human ability remains challenging. Similarities between facial images, represented by intensities of pixels, geometric proportions and linear and non-linear deformations of spatial normalization of patterns, can be described as a high dimensional and sparse statistical pattern recognition problem well addressed by humans but with non-trivial scientific issues related to feature extraction and automatic coding of relevant information, classification and prediction of patterns, modelling and visual reconstruction of discriminant subspaces. These issues are multidisciplinary and inherent to several applications in Computer Science, Engineering, Psychology and Neuroscience, among others, with the aim to explain and emulate how humans accomplish so successfully this discriminant process of coding and decoding high dimensional visual patterns that may be metrically very close to each other.

The main scope of this workshop is to gather research and technological initiatives that process facial information not only as a key to security but also as a fundamental and singular pattern in human perception, social, medical and forensic contexts. We intend to promote in this workshop multidisciplinary links between research in the areas of Biometrics, Pattern Recognition, Computer Vision, Forensic Imaging, Perception and Anthropometry that have investigated faces from distinct applied perspectives, which, however, might share common problems and use similar techniques.

#### Invited speakers:

Josh Davis, Dept. of Psychology and Counselling, Univ. of Greenwich, London, UK.  
Ruth Guinsburg, Dept. of Pediatrics, UNIFESP, São Paulo, Brazil.

# **Facial composites: A successful collaboration between technology and psychology**

**Dr. Josh P. Davis**  
**Reader in Applied Psychology**  
**University of Greenwich, London, UK**

## **Abstract (Invited Talk)**

Facial composites are created by witnesses unfamiliar with the perpetrator of a crime, with the aim of recognition by witnesses familiar with the offender. Computerised facial composite systems were originally feature-based in nature, and required the witness to verbally provide a description of individual facial features, select features from databases and to assemble them into a whole face composite. These processes are cognitively demanding, and not surprisingly the final composites produced were often a poor likeness. Drawing on psychological principles that faces are primarily processed as a Gestalt, and that recognition is more accurate than recall, modern holistic facial composite systems exploit these mechanisms, and often result in far more recognisable composites, increasing suspect identifications. Witness interviewing methods and various post-composite-construction technological techniques, also drawing on psychology can further enhance the likelihood of a facial composite being recognised, and the suspect subsequently being identified by the composite-creating witness from a line-up (identity parade). These procedures are being incorporated into worldwide police practice, and demonstrate that for face processing technology to be successfully implemented in the workplace, the design of the interface between the human and the machine must be a priority in system development.

## **Short Biography (International Invited Speaker)**

Dr. Josh P. Davis (BSc, PGCertHE, MSc, FHEA, MBPsS, PhD) has been a Senior Lecturer in Psychology at the University of Greenwich since 2008. His PhD was on the "Forensic Identification of Unfamiliar Faces in CCTV Images" (2007) and he has since published research on human face recognition and eyewitness identification, so called 'super-recognisers', and methods used by expert witnesses to provide evidence of identification in court ('facial comparison evidence'). A strong focus has been his collaborations with the University of Kent examining the reliability of facial composite systems (e.g., E-FIT, EFIT-V), and methods to enhance the likelihood of composite recognition by witnesses. He is a member of the European Association of Psychology and Law and the British Psychological Society. With London's Metropolitan Police Service, and the Madrid Police, he is a partner on the European Commission funded LASIE project designed to enhance the manner in which the police employ digital evidence and has also advised other UK police forces, and consulted with business. He has presented his research worldwide (e.g., Australia, Bangladesh, Canada, China, Germany, Russia, USA), has featured in the international media, and his first co-edited book "Forensic Facial Identification: Theory and Practice of Identification from Eyewitnesses, Composites and CCTV" (Wiley Blackwell) was published in 2015 (Valentine & Davis, 2015).

# **Challenges in neonatal pain assessment: Is there a role for a computer eye?**

**Professor Ruth Guinsburg**

**Division of Neonatal Medicine, Escola Paulista de Medicina  
Federal University of São Paulo, São Paulo, Brazil**

## **Abstract (Invited Talk)**

Newborn infants are exposed to painful experiences that might increase their short and long-term morbidity and mortality, in addition to being associated with neurological developmental disorders. Improvements in this scenario require practical and efficacious methods of pain assessment, safer drugs, organisation of services allowing for the detection of flaws in the care provided, and continuous updating and sensitisation of neonatal care providers. Routine bedside assessment of pain in critically ill neonates is considered crucial for the proper management of pain, but inappropriate assessment of neonatal pain is an integral component of the under-treatment of pain in neonatal care units. Humans might perhaps be inherently flawed in the assessment of pain in others, and if that were indeed the case, then human-mediated pain assessment should be replaced by technology. The situation just depicted defines the context of the conference, which will discuss the possibility of replacing the human with a computer eye in the recognition of the facial expressions of pain in newborn infants.

## **Short Biography (National Invited Speaker)**

Ruth Guinsburg holds a Bachelor's degree in Medicine from Federal University of São Paulo (1982), Master's degree in Pediatrics and Applied Sciences to Pediatrics from Federal University of São Paulo (1988), Doctorate's degree in Pediatrics and Applied Sciences to Pediatrics (1993) and Livre Docência in Pediatrics (2003) at the Federal University of São Paulo. She has supervised research on Pediatrics and Applied Sciences to Pediatrics in Federal University of São Paulo since 1997. Professor Guinsburg obtained the title of specialist in Pediatrics in 1985 and the habilitation license in the area of Neonatology in 1995 by the Brazilian Society of Pediatrics. Since 2007 she has been Professor of Neonatal Pediatrics at Department of Pediatrics in the Federal University of São Paulo. Professor Guinsburg is currently the head of the Neonatal Intensive Care Unit at the Sao Paulo Hospital and head of the Neonatal resuscitation program of the Brazilian Society of Pediatrics. She is the editor-in-chief of the Revista Paulista de Pediatria. Professor Ruth Guinsburg has also been a member of the International Liaison Committee on Neonatal Resuscitation since 2005. She has served as scientific reviewer of several national and international journals, and has contributed to the Brazilian agency FAPESP as scientific advisor evaluating research projects with funding requests. Her main research interests are in pain in newborn babies, diseases in the neonatal period and neonatal mortality, with focus on resuscitation of newborns in the delivery room.

### **Submission and revision:**

Papers should describe unpublished work on face processing applications and be submitted via CMT system using the following link:

<https://cmt.research.microsoft.com/FPA2016>

analogously to the main track of the SIBGRAPI conference. All manuscripts must be in English, have 4 pages (SIBGRAPI IEEE format) and will be reviewed by at least three members of the technical program committee.

Submission deadline (**extended**): ~~August 1<sup>st</sup> 2016~~ **August 15<sup>th</sup> 2016**.

### **Technical program committee:**

André L. F. Almeida, UFC, Ceará, Brazil  
Carlos E. Thomaz, FEI, São Paulo, Brazil  
Christopher J. Solomon, University of Kent, Kent, UK  
Daniel Rueckert, Imperial College, London, UK  
Duncan F. Gillies, Imperial College, London, UK  
Gilka J. F. Gattas, USP, São Paulo, Brazil  
Gilson A. Giraldi, LNCC, Rio de Janeiro, Brazil  
Jaime S. Cardoso, Universidade do Porto, Porto, Portugal  
Josh P. Davis, University of Greenwich, London, UK  
Paula D. P. Costa, UNICAMP, São Paulo, Brazil  
Paulo G. Pinheiro, HOO.BOX Robotics, São Paulo, Brazil  
Raul Q. Feitosa, PUC-Rio, Rio de Janeiro, Brazil  
Ruth Guinsburg, UNIFESP, São Paulo, Brazil  
Stuart J. Gibson, University of Kent, Kent, UK  
William R. Schwartz, UFMG, Minas Gerais, Brazil

### **Workshop chairs:**

Carlos E. Thomaz, FEI, São Paulo, Brazil, [cet@fei.edu.br](mailto:cet@fei.edu.br) (contact person)  
Gilson A. Giraldi, LNCC, Rio de Janeiro, Brazil, [gilson@lncc.br](mailto:gilson@lncc.br)  
Stuart J. Gibson, University of Kent, Canterbury, UK, [s.j.gibson@kent.ac.uk](mailto:s.j.gibson@kent.ac.uk)

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**CFP:** <http://fei.edu.br/~cet/SIBGRAPI2016-TWFPA-CFP.pdf>