General Chair’s Welcome to IJCB 2011

This conference is the joining of two major conference series in biometrics research, the *Biometrics Theory, Applications and Systems (BTAS)* tradition and the *International Conference on Biometrics (ICB)* tradition. Measured by number of papers submitted, it is the largest of either conference held to date. The Program Chairs did a great job of handling the unexpectedly large number of submissions. They describe the reviewing and selection process below.

First, we want to thank each of our sponsors. **Honeywell** is graciously and generously sponsoring the Best Student Paper Award. The winner(s) of this award will be announced at the conference dinner. **Progeny Systems** is graciously and generously sponsoring the conference reception. We also greatly appreciate the support of our general sponsors: **L1 Identity Systems, Cognitec, IET Journals** and **SAIC**. We sincerely appreciate the support and involvement of each of these sponsors.

**IJCB 2011** includes a number of changes and improvements relative to past *BTAS* and *ICB* meetings. For the first time, there is a Doctoral Consortium, with PhD student participation sponsored by the National Science Foundation and by IAPR. Reviewing this year was done in “double blind” style and allowed for an author rebuttal phase. And relative to the *BTAS* conference series, both a tutorials program and competitions have been added. The Program Chairs have done a great job of organizing the technical program from the submitted papers. We greatly appreciate all of their efforts.

Kevin W. Bowyer and Rama Chellappa,
General Chairs for *IJCB 2011*

Program Chair’s Welcome to IJCB 2011

**IJCB 2011** had 324 papers registered and 306 reviewed from which 31 papers were accepted for oral and 76 for poster presentations, an increase in papers submitted, accepted and overall selectivity. The topics with the most submissions were 2D face, fingerprint and iris with 71, 29, and 29 submissions respectively. The review process for *IJCB 2011* was diligent and required 951 reviews to support the decision process. This involved 154 reviewers who spent significant time and effort in reviewing.

**IJCB 2011** introduced a rebuttal phase for the authors to comment on the reviews and a discussion phase for the reviewers to discuss among themselves. The discussion phase enabled each reviewer to adjust his/her reviews based on the opinions of the other reviewers, the rebuttal from the authors and a discussion. The whole process, conducted double blind within CMT, tended to result in a consensus opinion on most submissions. Papers associated with any chair were handled separately with no involvement of that chair and virtually no difference in acceptance rate.

We carefully considered all the information available to make the final decisions. We provided meta-reviews, especially for the submissions with inconsistent reviews. The rigorous acceptance standards and selectivity resulted in rejection of some potentially interesting papers which suffered from presentation problems. As *BTAS* and *ICB* run annually, we expect these works will become available to the research community in an improved form at one of the future events.

The resulting conference program has a wide international representation, with papers from 26 countries. It includes four tutorials, and the presentation of the results of four biometric algorithm competitions, sponsored by the conference. The program is enhanced by 3 invited talks by eminent speakers: Brian Lovell speaking on “Remote Face, Iris, and Appearance Biometrics for Border and Transport Security”, Kenneth R. Moses speaking on “The Mayfield Voyage” and Michael C. King, speaking on “Current Successes and Future Directions of the BEST Program”.

We hope this meeting will result in fruitful technical interactions of high scientific quality for the benefit of both the attendees and the biometrics research community. We would like to thank all who made this possible, especially the authors, reviewers, competition organizers, as well as the invited speakers.

Terry Boult, Josef Kittler, Ajay Kumar
Program Chairs for *IJCB 2011*
Conference Session Details

Monday, October 10, 2011

08:00 - 17:00 Biometrics Council Administrative Committee Meeting
Location: Executive Boardroom
Tutorial Presenter: Nalini Ratha (IBM Research)

08:30 - 12:00 Tutorial: Introduction to the CSU Baseline Algorithms
Location: Potomac View Room
Tutorial Presenters: Ross Beveridge (Colorado State University) and David Bolme (Colorado State University)

Tutorial: 3D-Aided Face Recognition
Location: Wilson/Harrison Room
Tutorial Presenters: Ioannis Kakadiaris (University of Houston) and Liming Chen (Ecole Centrale de Lyon)

13:30 - 17:00 Tutorial: Biometrics – Practical Issues In Privacy and Security
Location: Potomac View Room
Tutorial Presenters: Terrance Boult (University of Colorado at Colorado Springs) and Walter Scheirer (Securics Inc.)

Tutorial: Sparse Representation and Low-Rank Representation for Biometrics
Location: Wilson/Harrison Room
Tutorial Presenters: Allen Yang (University of California, Berkeley), Yi Ma (University of Illinois at Urbana-Champaign), Vishal Patel (University of Maryland, College Park), and John Wright (Columbia University)

Tuesday, October 11, 2011

08:45 - 09:00 IJCB 2011 Conference Welcome
Location: Washington Ballroom
Session Chairs: Kevin Bowyer (University of Notre Dame), Ajay Kumar (The Hong Kong Polytechnic University), Josef Kittler (University of Surrey), and Terrance Boult (University of Colorado at Colorado Springs), and Rama Chellappa (University of Maryland, College Park)

09:00 - 10:10 Oral Presentations: Fingerprint
Location: Washington Ballroom
Session Chair: B.V.K. Vijaya Kumar (Carnegie Mellon University)

Fingerprint Matching by Incorporating Minutiae Discriminability
Kai Cao (Xidian University), Eryun Liu (Xidian University), Liaojun Pang (Xidian University), Jimin Liang (Xidian University), and Jie Tian (Institute of Automation)

Fingerprint Enhancement Using Hierarchical Markov Random Fields
Rama Reddy (IIIT - Hyderabad) and Anoop Namboodiri (IIIT - Hyderabad)
Separating Overlapped Fingerprints Using Constrained Relaxation Labeling
Yuan Shi (Tsinghua University), Jianjiang Feng (Tsinghua University), and Jie Zhou (Tsinghua University)

A Bayesian Approach to Fingerprint Minutia Localization and Quality Assessment Using Adaptable Templates
Nathaniel Short (Virginia Tech), Lynn Abbott (Virginia Tech), Michael Hsiao (Virginia Tech), and Edward Fox (Virginia Tech)

10:10 - 10:45 Two-Minute Poster Spotlights: Fingerprint and Soft Biometrics
Location: Washington Ballroom
Session Chair: Patrick Flynn (University of Notre Dame)

3D to 2D Fingerprints: Unrolling and Distortion Correction
Qijun Zhao (Michigan State University), Anil Jain (Michigan State University and Korea University), and Gil Abramovich (GE Global Research)

Wet Fingerprint Recognition: Challenges and Opportunities
Prasanna Venkatesh Krishnasamy (University of California San Diego), Serge Belongie (University of California San Diego), and David Kriegman (University of California San Diego)

On Matching Latent to Latent Fingerprints
Anush Sankaran (IIT Delhi), Tejas Dhamecha (IIT Delhi), Mayank Vatsa (IIT Delhi), and Richa Singh (IIT Delhi)

Fingerprint Feature Extraction from Gray Scale Images by Ridge Tracing
Devansh Arpit (IIIT - Hyderabad) and Anoop Namboodiri (IIIT - Hyderabad)

Latent Fingerprint Matching Using Descriptor-Based Hough Transform
Alessandra Paulino (Michigan State University), Jianjiang Feng (Tsinghua University), and Anil Jain (Michigan State University and Korea University)

On the Evidential Value of Fingerprints
Heeseung Choi (Michigan State University), Abhishek Nagar (Michigan State University), and Anil Jain (Michigan State University and Korea University)

Real-time Feedback for Usable Fingerprint Systems
Haiying Guan (National Institute of Standards and Technology), Mary Theofanos (National Institute of Standards and Technology), Yee-Yin Choong (National Institute of Standards and Technology), and Brian Stanton (National Institute of Standards and Technology)

Using Comparative Human Descriptions for Soft Biometrics
Daniel Reid (University of Southampton) and Mark Nixon (University of Southampton)

Can Facial Metrology Predict Gender?
Deng Cao (West Virginia University), Cunjian Chen (West Virginia University), Marco Piccirilli (West Virginia University), Donald Adjeroh (West Virginia University), Thirimachos Bourlai (West Virginia University), and Arun Ross (West Virginia University)
Fusion of Region-Based Representations for Gender Identification
Si Ying Diana Hu (Carnegie Mellon University), Brendan Jou (Carnegie Mellon University), Aaron Jaech (Carnegie Mellon University), and Marios Savvides (Carnegie Mellon University)

Evaluation of Gender Classification Methods on Thermal and Near-infrared Face Images
Cunjian Chen (West Virginia University) and Arun Ross (West Virginia University)

Hierarchical and Discriminative Bag of Features for Face Profile and Ear Based Gender Classification
Guangpeng Zhang (Beihang University) and Yunhong Wang (Beihang University)

Is Gender Classification Across Ethnicity Feasible Using Discriminant Functions?
Tejas Dhamecha (IIIT Delhi), Anush Sankaran (IIIT Delhi), Richa Singh (IIIT Delhi), and Mayank Vatsa (IIIT Delhi)

Fingerprint Verification Competition at IJCB 2011
Raffaele Cappelli (University of Bologna), Matteo Ferrara (University of Bologna), Davide Maltoni (University of Bologna), and Francesco Turroni (University of Bologna)

10:45 - 12:00 Poster and Tea/Coffee Break
Location: Wilson/Harrison Room

12:00 - 13:30 Lunch – On Your Own

13:30 - 14:20 Oral Presentations: Other Biometrics
Location: Washington Ballroom
Session Chair: Karl Ricianek (University of North Carolina Wilmington)

Fusion of Directional Transitional Features for Off-Line Signature Verification
Konstantinos Tselios (University of Bolton), Elias Zois (Technological and Educational Institute of Athens), Athanasios Nasiopoulos (Technological and Educational Institute of Athens), and George Economou (University of Patras)

Continuous and Non-intrusive Identity Verification in Real-time Environments Based on Free-Text Keystroke Dynamics
Arik Messerman (Berlin Institute of Technology), Tarik Mustafic (Berlin Institute of Technology), Seyit Camtepe (Berlin Institute of Technology), and Sahin Albayrak (Berlin Institute of Technology)

Eyebrow Shape-Based Features for Biometric Recognition and Gender Classification: A Feasibility Study
Damon Woodard (Clemson University) and Yujie Dong (Clemson University)
Location: Washington Ballroom
Session Chair: Ajay Kumar (The Hong Kong Polytechnic University)

Two-Minute Poster Spotlights: Palm/Text/Writer/Fusion
Location: Washington Ballroom
Session Chair: Stan Li (Chinese Academy of Sciences)

Palmprint Indexing Based on Ridge Features
Xiao Yang (Tsinghua University), Jianjiang Feng (Tsinghua University), and Jie Zhou (Tsinghua University)

On Co-training Online Biometric Classifiers
Himanshu Bhatt (IIIT Delhi), Samarth Bharadwaj (IIIT Delhi), Richa Singh (IIIT Delhi), Mayank Vatsa (IIIT Delhi), Afzel Noore (West Virginia University), and Arun Ross (West Virginia University)

Latent-to-full Palmprint Comparison Based on Radial Triangulation Under Forensic Conditions
Ruifang Wang (Universidad Autónoma de Madrid), Daniel Ramos (Universidad Autónoma de Madrid), and Julian Fierrez (Universidad Autónoma de Madrid)

Palm Vein Recognition with Local Binary Patterns and Local Derivative Patterns
Leila Mirmohamadsadeghi (Swiss Federal Institute of Technology Lausanne) and Andrzej Drygajlo (Swiss Federal Institute of Technology Lausanne)

Biometric Recognition of Newborns: Identification Using Palmprints
Rubisley De Paula Lemes (Universidade Federal do Paraná), Olga Bellon (Universidade Federal do Paraná), Luciano Silva (Universidade Federal do Paraná), and Anil Jain (Michigan State University and Korea University)

Offline Signature Verification Using Classifier Combination of HOG and LBP Features
Mustafa Berkay Yılmaz (Sabancı University), Berrin Yanikoglu (Sabancı University), Alisher Kholmatov (Sabancı University), and Caglar Tirkaz (Sabancı University)

On-line Signature Verification Using Wavelet Packet
Kaiyue Wang (Beihang University), Yunhong Wang (Beihang University), and Zhaoxiang Zhang (Beihang University)

Dynamic Signature for a Closed-Set Identification Based on Nonlinear Analysis
David Ahmedt (Instituto Tecnologico Metropolitano), Edilson Delgado (Instituto Tecnologico Metropolitano), Jesus Vargas (Universidad de Antioquia), and Jorge Jaramillo (Medellín Metropolitan Institute of Technology)

Study on the BeiHang Keystroke Dynamics Database
Yilin Li (Beihang University), Baocang Zhang (Beihang University), Yao Cao (Beihang University), Sanqiang Zhao (Griffith University), Yongsheng Gao (Griffith University), and Jianzhuang Liu (Chinese Academy of Sciences)
Quality Driven Biometric Classifier Selection Framework for Improved Performance
Himanshu Bhatt (IIIT Delhi), Samarth Bharadwaj (IIIT Delhi), Mayank Vatsa (IIIT Delhi),
Richa Singh (IIIT Delhi), Arun Ross (West Virginia University), and Aftel Noore
(West Virginia University)

Comparison of Quality-Based Fusion of Face and Iris Biometrics
Peter Johnson (Clarkson University), Fang Hua (Clarkson University), and
Stephanie Shuckers (Clarkson University)

Fast and Accurate Biometric Identification Using Score Level Indexing and Fusion
Takao Murakami (Hitachi, Ltd.) and Kenta Takahashi (Hitachi, Ltd.)

An Investigation of Keystroke and Stylometry Traits for Authenticating Online
Test Takers
John Stewart (Lake Erie College), John Monaco (Pace University), Sung-Hyuk Cha
(Pace University), and Charles Tappert (Pace University)

BioSecure Signature Evaluation Campaign (ESRA '2011: Evaluating Systems on
Quality-based Categories of Skilled Forgeries
Nesma Houmami (Telecom SudParis), Sonia Garcia-Salicetti (Telecom SudParis),
Beradette Dorizzi (Telecom SudParis), Jugurta Montalvão (Universidade Federal de
Sergipe), Jânio Coutinho Canuto (Universidade Federal de Sergipe), Mário Vasconcelos
Andrade (TECNED Tecnologias Educacionais), Yu Qiao (Shenzhen Institutes of Advanced
Technology), Xingxing Wang (Shenzhen Institutes of Advanced Technology), Tobias Scheidat
(Brandenburg University of Applied Sciences), Andrey Makrushin (Otto-von-Guericke
University of Magdeburg), Daigo Muramatsu (Seikei University), Joanna Putz-Leszczynska
(Warsaw University of Technology), Michal Kudelski (Warsaw University of Technology),
Marcos Faundez-Zanuy (Escola Universitaria Politecnica de Mataro), Juan Pascual-Gaspar
(Universidad de Valladolid), Valentin Cardeñosa-Payo (Universidad de Valladolid), Carlos
Vivaracho-Pascual (Universidad de Valladolid), Enrique Argones Rúa (University of Vigo),
José Luis Alba Castro (University of Vigo), Alisher Kholmátov (Sabanci University), and
Berrin Yanikoglu (Sabanci University)

15:40 - 16:55  Posters and Tea/Coffee Break
Location: Wilson/Harrison Room

16:55 - 17:45  Oral Presentations: Fusion
Location: Washington Ballroom
Session Chairs: Walter Scheirer (Securics Inc.)

Heterogeneous Information Fusion: A Novel Fusion Paradigm for Biometric Systems
Norman Poh (University of Surrey), Amin Merati (University of Surrey), and Josef Kittler
(University of Surrey)

Combination of Multiple Samples Utilizing Identification Model in Biometric Systems
Xi Cheng (University at Buffalo), Sergey Tulyakov (University at Buffalo), and Venu
Govindaraju (University at Buffalo)
Score-level Fusion Based on the Direct Estimation of the Bayes Error Gradient Distribution
Yasushi Makihara (Osaka University), Amtab Hossain (University of Rajshahi), Daigo Muramatsu (Osaka University), and Yasushi Yagi (Osaka University)

18:00 - 21:00  Conference Reception *(sponsored by Progeny Systems)*
Location: Windows Over Washington

18:00 - 18:30  IET Biometrics Journal Announcement
Location: Washington Ballroom

18:30 - 19:30  IAPR TC4 Meeting
Location: Washington Ballroom

**Wednesday, October 12, 2011**

09:00 - 10:10  Oral Presentations: Face
Location: Washington Ballroom
Session Chair: Massimo Tistarelli *(University of Sassari)*

**Synthesis-based Recognition of Low Resolution Faces**
Sumit Shekhar *(University of Maryland, College Park)*, Vishal Patel *(University of Maryland, College Park)*, and Rama Chellappa *(University of Maryland, College Park)*

**3D Face Sketch Modeling and Assessment for Component Based Face Recognition**
Shaun Canavan *(Binghamton University)*, Xing Zhang *(Binghamton University)*, Lijun Yin *(Binghamton University)*, and Yong Zhang *(Youngstown State University)*

**Do You See What I See?: A More Realistic Eyewitness Sketch Recognition**
Hossein Nejati *(National University of Singapore)*, Terence Sim *(National University of Singapore)*, and Elisa Martinez Marroquin *(Ram on Llull University)*

**Fusing with Context: a Bayesian Approach to Combining Descriptive Attributes**
Walter Scheirer *(University of Colorado at Colorado Springs & Securics, Inc.)*, Neeraj Kumar *(Columbia University)*, Karl Ricanek *(University of North Carolina Wilmington)*, Terrance Boult *(University of Colorado at Colorado Springs)*, and Peter Belhumeur *(Columbia University)*

10:10 - 10:45  Two-Minute Poster Spotlights: 2D Face
Location: Washington Ballroom
Session Chair: Trina Russ *(Digital Signal Corporation)*

**Partial Face Recognition: An Alignment Free Approach**
Shengcai Liao *(Michigan State University)* and Anil Jain *(Michigan State University and Korea University)*

**Robust Face Recognition with Class Dependent Factor Analysis**
Birkan Tuç *(Istanbul Technical University)*, Volkan Dağılı *(Istanbul Technical University)*, and Muhittin Gökmen *(Istanbul Technical University)*
Two Faces Are Better Than One: Face Recognition in Group Photographs
Ohil K. Manyam (University of California San Diego), Neeraj Kumar (Columbia University), Peter Belhumeur (Columbia University), and David Kriegman (University of California San Diego)

Face Synthesis From Near-infrared to Visual Light via Sparse Representation
Zeda Zhang (Beihang University), Yunhong Wang (Beihang University), and Zhaoxiang Zhang (Beihang University)

Cross-spectral Face Recognition in Heterogeneous Environments: A Case Study on Matching Visible to Short-wave Infrared Imagery
Nathan Kalka (West Virginia University), Thirimachos Bourlai (West Virginia University), Bojan Cukic (West Virginia University), and Lawrence Hornak (West Virginia University)

Facial Landmark Detection in Uncontrolled Conditions
Boris Efraty (University of Houston), Chengwei Huang (University of Houston), Shishir Shah (University of Houston), and Ioannis Kakadiaris (University of Houston)

Person-Specific Face Representation for Recognition
Giovani Chiachiha (University of Campinas), Alexandre Falcão (University of Campinas), and Anderson Rocha (University of Campinas)

Face Recognition Across Time Lapse: On Learning Feature Subspaces
Brendan Klare (Michigan State University) and Anil Jain (Michigan State University and Korea University)

Face Verification Using Partial Least Squares One-Shot Model
Huimin Guo (University of Maryland), William Robson Schwartz (University of Campinas), and Larry Davis (University of Maryland)

Towards Incremental and Large Scale Face Recognition
Junjie Yan (Chinese Academy of Sciences), Zhen Lei (Chinese Academy of Sciences), Dong Yi (Chinese Academy of Sciences), and Stan Li (Chinese Academy of Sciences)

Inter-session Variability Modelling and Joint Factor Analysis for Face Authentication
Roy Wallace (Idiap Research Institute), Mitchell McLaren (Radboud University Nijmegen), Christopher McCool (Idiap Research Institute), and Sébastien Marcel (Idiap Research Institute)

Robust Head Pose Estimation via Semi-supervised Manifold Learning with l1-Graph Regularization
Hao Ji (School of Information and Communication Engineering), Fei Su (Beijing University of Posts and Telecommunications), and Yujia Zhu (Beijing University of Posts and Telecommunications)

Improved Face Recognition Using Super-Resolution
Emil Bilgazyev (University of Houston), Boris Efraty (University of Houston), Shishir Shah (University of Houston), and Ioannis Kakadiaris (University of Houston)

Face and Eye Detection on Hard Datasets
Jonthan Parris (University of Colorado, Colorado Springs), Micheal Wilber (University of Colorado, Colorado Springs), Brian Helfin (Securics Inc.), Ham Rara (University of Louisville),
Ahmed El-barkouky (University of Louisville), Aly Farag (University of Louisville), Javier Movellán (University of California San Diego), Modesto Santana (Universidad de Las Palmas de Gran Canaria), Javier Lorenzo (Universidad de Las Palmas de Gran Canaria), Mohammad Nayeen Teli (Colorado State University), Sebastien Marcel (Idiap Research Institute), Cosmin Atanasoaiei (Idiap Research Institute), and Terrance Boult (University of Colorado, Colorado Springs and Securics Inc.)

10:45 - 12:00 Poster and Tea/Coffee Break
Location: Wilson/Harrison Room

12:00 - 13:30 Lunch – On Your Own

13:30 - 14:40 Oral Presentations: Spoofing/Anti-Spoofing
Location: Washington Ballroom
Session Chair: Richa Singh (IIIT Delhi)

Counter-Measures to Photo Attacks in Face Recognition: A Public Database and a Baseline
André Anjos (Idiap Research Institute) and Sébastien Marcel (Idiap Research Institute)

Robustness of Multi-modal Biometric Verification Systems Under Realistic Spoofing Attacks
Battista Biggio (University of Cagliari), Zahid Akhtar (University of Cagliari), Giorgio Fumera (University of Cagliari), Gian Luca Marcialis (University of Cagliari), and Fabio Roli (University of Cagliari)

Face Spoofing Detection From Single Images Using Micro-Texture Analysis
Jukka Määttä, (University of Oulu), Abdenour Hadid (University of Oulu), and Matti Pietikäinen (University of Oulu)

Contourlet Appearance Model for Facial Age Estimation
Khoa Luu (Concordia University), Keshav Seshadri (Carnegie Mellon University), Marios Savvides (Carnegie Mellon University), Tien Bui (Concordia University), and Ching Y. Suen (Concordia University)

14:40 - 15:11 Two-Minute Poster Spotlights: Face/Template Protection
Location: Washington Ballroom
Session Chair: Jonathon Phillips (National Institute of Standards and Technology)

Face Recognition in Low-Resolution Videos Using Learning-Based Likelihood Measurement Model
Soma Biswas (University of Notre Dame), Gaurav Aggarwal (University of Notre Dame), and Patrick Flynn (University of Notre Dame)

A Robust Eye Localization Method for Low Quality Face Images
Dong Yi (Chinese Academy of Sciences), Zhen Lei (Chinese Academy of Sciences) and Stan Li (Chinese Academy of Sciences)
Low-Resolution Face Recognition via Simultaneous Discriminant Analysis
Changtao Zhou (Chinese Academy of Sciences), Zhiwei Zhang (Chinese Academy of Sciences),
Dong Yi (Chinese Academy of Sciences), Zhen Lei (Chinese Academy of Sciences), and Stan Li
(Chinese Academy of Sciences)

NFRAD: Near-Infrared Face Recognition at a Distance
Hyunju Maeng (Korea University), Hyun-cheol Choi (Korea University), Unsang Park
(Michigan State University), Anil Jain (Michigan State University and Korea University),
and Seong-Whan Lee (Korea University)

Fingerprint Template Protection with Minutia Vicinity Decomposition
Jin Zhe (Multimedia University) and Andrew Beng Jin Teoh (Yonsei University)

Reliability-balanced Feature Level Fusion for Fuzzy Commitment Scheme
Christian Rathgeb (University of Salzburg), Andreas Uhl (University of Salzburg), and
Peter Wild (University of Salzburg)

Identity Leakage Mitigation in Asymmetric Secure Sketches
Chengfang Fang (National University of Singapore), Qiming Li (Institute for Infocomm
Research), and Ee-Chien Chang (National University of Singapore)

Quantifying Privacy and Security of Biometric Fuzzy Commitment
Xuebing Zhou (Fraunhofer Institute for Computer Graphic Research IGD and Hochschule
Darmstadt), Arjan Kuijper (Fraunhofer Institute for Computer Graphic Research IGD),
Raymond Veldhuis (University of Twente), and Christoph Busch (Hochschule Darmstadt)

Learning Weighted Sparse Representation of Encoded Facial Normal Information for
Expression-Robust 3D Face Recognition
Huibin Li (Université de Lyon, Ecole Centrale Lyon), Di Huang (Université de Lyon, Ecole
Centrale Lyon), Jean-Marie Morvan (Université de Lyon 1, King Abdullah University of Science
and Technology), and Liming Chen (Université de Lyon, Ecole Centrale Lyon)

Model-based 3D Shape Recovery from Single Images of Unknown Pose and Illumination
Using a Small Number of Feature Points
Ham Rara (University of Louisville), Aly Farag (University of Louisville), and Todd Davis
(Electronic Warfare Associates, Inc.)

Generic 3D Face Pose Estimation Using Facial Shapes
Jingu Heo (Carnegie Mellon University) and Marios Savvides (Carnegie Mellon University)

UR3D-C: Linear Dimensionality Reduction for Efficient 3D Face Recognition
Omar Ocequeda (University of Houston), Georgios Passalis (University of Athens), Theoharis
Theoharis (University of Athens), Shishir Shah (University of Houston), and Ioannis Kakadiaris
(University of Houston)

Competition on Counter Measures to 2-D Facial Spoofing Attacks
Murali Mohan Chakka (Idiap Research Institute), André Anjos (Idiap Research Institute),
Sébastien Marcel (Idiap Research Institute), Roberto Tronci (Ambient Intelligence Laboratory),
Daniele Muntoni (Ambient Intelligence Laboratory), Gianluca Fadda (Ambient Intelligence Laboratory), Maurizio Pili (Ambient Intelligence Laboratory), Nicola Sirena (Ambient Intelligence Laboratory), Gabriele Murgia (Ambient Intelligence Laboratory), Marco Ristori (Ambient Intelligence Laboratory), Fabio Roli (University of Cagliari), Junjie Yan (Chinese Academy of Sciences), Dong Yi (Chinese Academy of Sciences), Zhen Lei (Chinese Academy of Sciences), Zhiwei Zhang (Chinese Academy of Sciences), Stan Li (Chinese Academy of Sciences), William Robson Schwartz (University of Campinas), Anderson Rocha (University of Campinas), Helio Pedrini (University of Campinas), Javier Lorenzo (Universidad de Las Palmas de Gran Canaria), Modesto Castrillón-Santana (Universidad de Las Palmas de Gran Canaria), Jukka Määttä, (University of Oulu), Abdenour Hadid (University of Oulu), Matti Pietikäinen (University of Oulu)

15:11 - 16:25 Poster and Tea/Coffee Break
Location: Wilson/Harrison Room

16:25 - 18:00 Oral Presentations: Other Biometrics/Speaker/Privacy
Location: Washington Ballroom
Session Chair: Sebastien Marcel (Idiap Research Institute)

Spectral Minutiae for Vein Pattern Recognition
Daniel Hartung (Gjøvik University College), Martin Olsen (Center for Advanced Security Research Darmstadt), Haiyun Xu (University of Twente), and Christoph Busch (Høgskolen i Gjøvik)

Fundamental Statistics of Relatively Permanent Pigmented or Vascular Skin Marks for Criminal and Victim Identification
Arfika Nurhudatiana (Nanyang Technological University), Adams Kong (Nanyang Technological University), Keyan Matinpour (University of California, Los Angeles), Siu-Yeung Cho (Nanyang Technological University), and Noah Craft (University of California, Los Angeles)

Speech Cryptographic Key Regeneration Based on Password
Keerati Inthavisas (Lehigh University) and Daniel Lopresti (Lehigh University)

Fast Speaker Verification on Mobile Phone Data Using Boosted Slice Classifiers
Anindya Roy (Idiap Research Institute, École Polytechnique Fédérale de Lausanne), Mathew Magimai.-Doss (Idiap Research Institute), and Sebastien Marcel (Idiap Research Institute)

Unconditionally Provably Secure Cancelable Biometrics Based on a Quotient Polynomial Ring
Kenta Takahashi (Hitachi, Ltd.)

19:00 - 21:00 Conference Banquet: Invited Speaker: Kenneth C. Moses, “The Mayfield Voyage”
Location: Commonwealth Room
Thursday, October 13, 2011

09:00 - 10:10  Oral Presentations: Gait and Iris
Location: Washington Ballroom
Session Chair: Mark Nixon (University of Southampton)

Maximization of Mutual Information for Multi-view Gait-based Gender Classification Using Gabor Feature
Maodi Hu (Beihang University), Yunhong Wang (Beihang University), and Zhaoxiang Zhang (Beihang University)

Long Range Iris Acquisition System for Stationary and Mobile Subjects
Shreyas Venugopalan (Carnegie Mellon University), Unni Prasad (Carnegie Mellon University), Khalid Harun (Carnegie Mellon University), Kyle Neblett (Carnegie Mellon University), Douglas Toomey (Mauna Kea Infra-Red), Joseph Heyman (Carnegie Mellon University), and Marios Savvides (Carnegie Mellon University)

A Comparative Evaluation of Iris and Ocular Recognition Methods on Challenging Ocular Images
Vishnu Naresh Boddeti (Carnegie Mellon University), Jon Smereka (Carnegie Mellon University), and B.V.K. Vijaya Kumar (Carnegie Mellon University)

Robust Iris Recognition Based on Correlation Matching of Gabor Images
Man Zhang (Chinese Academy of Sciences), Zhenan Sun (Chinese Academy of Sciences), and Tieniu Tan (Chinese Academy of Sciences)

10:10 - 10:45  Two-Minute Poster Spotlights: Face/Other/Spoofing
Location: Washington Ballroom
Session Chair: Venu Govindaraju (University of Buffalo)

The Effect of Time on Ear Biometrics
Mina Ibrahim (University of Southampton), Mark Nixon (University of Southampton), and Sasan Mahmoodi (University of Southampton)

An Adaptive Resolution Voxelization Framework for 3D Ear Recognition
Steven Cadavid (University of Miami), Sherin Fathy (University of Miami), Jindan Zhou (University of Miami), and Mohamed Abdel-Mottaleb (University of Miami)

Investigating Age Invariant Face Recognition Based on Periocular Biometrics
Felix Juefei-Xu (Carnegie Mellon University), Khoa Luu (Concordia University), Marios Savvides (Carnegie Mellon University), Tien Bui (Concordia University), and Ching Y. Suen (Concordia University)

Difficult Imaging Covariates or Difficult Subjects? – An Empirical Investigation
Jeffrey Paone (University of Notre Dame), Soma Biswas (University of Notre Dame), Gaurav Aggarwal (University of Notre Dame), and Patrick Flynn (University of Notre Dame)
Prediction and Validation of Indexing Performance for Biometrics
Suresh Kumar Ramachandran Nair (University of California, Riverside), Bir Bhanu (University of California, Riverside), Subir Ghosh (University of California, Riverside), and Ninad Thakoor (University of California, Riverside)

Graph Modeling Based Local Descriptor Selection via A Hierarchical Structure for Biometric Recognition
Xiaobo Zhang (Chinese Academy of Sciences), Zhenan Sun (Chinese Academy of Sciences), and Tieniu Tan (Chinese Academy of Sciences)

Fusion of Multiple Clues for Photo-attack Detection in Face Recognition Systems
Roberto Tronci (AmiLab - Sardegna DistrICT), Daniele Muntoni (AmiLab - Sardegna DistrICT), Gianluca Fadda (AmiLab - Sardegna DistrICT), Maurizio Pili (AmiLab - Sardegna DistrICT), Nicola Sirena (AmiLab - Sardegna DistrICT), Marco Ristori (AmiLab - Sardegna DistrICT), Gabriele Murgia (AmiLab - Sardegna DistrICT), and Fabio Roli (University of Cagliari)

Face Spoofing Detection Through Partial Least Squares and Low-Level Descriptors
William Robson Schwartz (University of Campinas), Anderson Rocha (University of Campinas), and Helio Pedrini (University of Campinas)

Biometric Identification via Eye Movement Scanpaths in Reading
Corey Holland (Texas State University) and Oleg Komogortsev (Texas State University)

Towards Automated Pose Invariant 3D Dental Biometrics
Xin Zhong (National University of Singapore), Deping Yu (National University of Singapore), Kelvin WC Foong (National University of Singapore), Terence Sim (National University of Singapore), Yoke San Wong (National University of Singapore), and Ho-lun Cheng (National University of Singapore)

Retina Features Based on Vessel Graph Substructures
Arathi Arakala (RMIT University), Stephen Davis (RMIT University), and Kathy Horadam (RMIT University)

A Robust Eye-Corner Detection Method for Real-World Data
Gil Santos (University of Beira Interior) and Hugo Proença (University of Beira Interior)

Biometric Zoos: Theory and Experimental Evidence
Mohammad Nayeem Teli (Colorado State University), Ross Beveridge (Colorado State University), Jonathon Phillips (NIST), Geof Givens (Colorado State University), Bruce Draper (Colorado State University), and David Bolme (Colorado State University)

10:45 - 12:00 Poster and Tea/Coffee Break
Location: Wilson/Harrison Room

12:00 - 13:30 Lunch – On Your Own
13:30 - 14:15  IJCB 2011 Invited Speaker: Michael C. King, “Current Successes and Future Directions of the BEST Program”
Location: Washington Ballroom
Session Chair: Ajay Kumar (The Hong Kong Polytechnic University)

14:15 - 14:45  Two-Minute Poster Spotlights: Iris/Gait/Face
Location: Washington Ballroom
Session Chair: Hugo Proença (University of Beira Interior)

A Novel Image Deblurring Method to Improve Iris Recognition Accuracy
Jing Liu (Chinese Academy of Sciences), Zhenan Sun (Chinese Academy of Sciences), and Tieniu Tan (Chinese Academy of Sciences)

Dilation Aware Multi-Image Enrollment for Iris Biometrics
Estefan Ortiz (University of Notre Dame) and Kevin Bowyer (University of Notre Dame)

Learning Hierarchical Visual Codebook for Iris Liveness Detection
Hui Zhang (Chinese Academy of Sciences), Zhenan Sun (Chinese Academy of Sciences), Tieniu Tan (Chinese Academy of Sciences), and Jianyu Wang (Chinese Academy of Sciences)

Gait Recognition Using Periodic Temporal Super Resolution for Low Frame-rate Videos
Naoki Akae (Osaka University), Yasushi Makihara (Osaka University), and Yasushi Yagi (Osaka University)

Gait Energy Volumes and Frontal Gait Recognition Using Depth Images
Sabesan Sivapalan (Queensland University of Technology), Daniel Chen (Queensland University of Technology), Simon Denman (Queensland University of Technology), Clinton Fookes (Queensland University of Technology), and Sridha Sridharan (Queensland University of Technology)

Phase Registration in a Gallery Improving Gait Authentication
Ngo Thanh Trung (Osaka University), Yasushi Makihara (Osaka University), Hajime Nagahara (Kyushu University), Ryusuke Sagawa (National Institute of Advanced Industrial Science and Technology), Yasuhiro Mukaigawa (Osaka University), and Yasushi Yagi (Osaka University)

Model Based 3D Gait Biometrics
Gunawan Arifianto (University of Southampton) and Mark Nixon (University of Southampton)

Fusion of Structured Projections for Cancelable Face Identity Verification
Beom-Seok Oh (Yonsei University) and Kar-Ann Toh (Yonsei University)

Analysis of Facial Features in Identical Twins
Brendan Klare (Michigan State University), Alessandra Paulino (Michigan State University), and Anil Jain (Michigan State University and Korea University)

Facial Recognition of Identical Twins
Matthew Pruitt (University of Notre Dame), Jason Grant (University of Notre Dame), Jeffrey Paone (University of Notre Dame), Patrick Flynn (University of Notre Dame), and Richard Vorder Bruegge (Federal Bureau of Investigation)
Face Recognition for Look-Alikes: A Preliminary Study
Hemank Lamba (IIIT Delhi), Ankit Sarkar (IIIT Delhi), Mayank Vatsa (IIIT Delhi), Richa Singh (IIIT Delhi), and Afzel Noore (West Virginia University)

Symmetric Surface-Feature Based 3D Face Recognition for Partial Data

14:45 - 15:45  Poster and Tea/Coffee Break
Location: Wilson/Harrison Room

15:45 - 17:00  Best-Reviewed Papers Session
Location: Washington Ballroom
Session Chair: Arun Ross (West Virginia University)

Latent Fingerprint Enhancement via Robust Orientation Field Estimation
Sowoon Yoon (Michigan State University), Jianjiang Feng (Tsinghua University), and Anil Jain (Michigan State University and Korea University)

Mining Patterns of Orientations and Magnitudes for Face Recognition
Ngoc-Son Vu (Grenoble Institute of Technology) and Alice Caplier (Grenoble Institute of Technology)

Twins 3D Face Recognition Challenge
Vipin Vijayan (University of Notre Dame), Kevin Bowyer (University of Notre Dame), Patrick Flynn (University of Notre Dame), Di Huang (Ecole Centrale Lyon), Liming Chen (Universite de Lyon), Mark Hansen (University of the West of England), Shishir Shah (University of Houston), Omar Ocegueda (University of Houston), and Ioannis Kakadiaris (University of Houston)

Gait-based Age Estimation Using a Whole-generation Gait Database
Yasushi Makihara (Osaka University), Mayu Okumura (Osaka University), Haruyuki Iwama (Osaka University), and Yasushi Yagi (Osaka University)
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