Mathematics of Data/Image Pattern Recognition, Compression, Coding, and Encryption X, with Applications

Conference Chair: Gerhard X. Pitter, Univ. of Florida; Mark S. Schmalz, Univ. of Florida; Junior Barrera, Univ. de Sao Paulo (Brazil); Jaakko T. Astola, Tampere Univ. of Technology (Finland)

Program Committee: Stefano Baronti, Istituto di Fisica Applicata Nello Carrara (Italy); Mark L. Fowler, Binghamton Univ.; Victoria T. Franques, U.S. Dept. of Energy; Andrea Garzelli, Univ. degli Studi di Siena (Italy); Abdulsalim A. Helal, Univ. of Florida; Ljfford McLaughlin, Texas A&M Univ.; Daniel S. Myers, Sandia National Labs.; James F. Scholl, College of Optical Sciences/The Univ. of Arizona

Sunday 26 August

introductory Remarks 1:30 to 1:35 pm
Chair: Mark S. Schmalz, Univ. of Florida

SESSION 1  Sun. 135 to 3:15 pm
Compression
Chair: Lifford McLaughlin, Texas A&M Univ.

Model-based compression of the calibration matrix for hyperspectral imaging systems, J. F. Schol, College of Optical Sciences/Univ. of Arizona; E. K. Hege, MKS Imaging Technology, LLC; G. O’Connell, Coaxent LLC, and E. L. Dereniak, College of Optical Sciences/Univ. of Arizona  
Optimization of a lossless object-based compression embedded on GAIN a next-generation space telescope, E. Osam, C. Tims, Univ. de Versailles Saint-Quentin en Yvelines (France)  
Design of object-based compression algorithms for video imagery, M. S. Schmalz, Univ. of Florida  
Design of multichannel filter banks for subband coding of audio signals, A. Goel, R. K. Baghel, L. Gupta, Maulana Azad National Institute of Technology (India)  

SESSION 2  Sun. 3:40 to 4:35 pm
Image Quality and Error Analysis
Chair: Mark S. Schmalz, Univ. of Florida

The optimum running-type approximation for time-limited worst-case measures of error based on Fredholm integral equation using Pincherle-Souriau kernel, Y. Kita, Ohi Univ. (Japan); T. Kida, Nihon Univ. (Japan)  
Mesh-free multiresolution solver for PDEs with large gradients, H. C. Moir, San Jose State Univ.; A. Limon, Cilamont Graduate Univ.  
Perceptual assessment of image quality in multimedia technology, K. Fliegel, Czech Technical Univ. in Prague (Czech Republic)  

Monday 27 August

introductory Remarks 1:30 to 1:35 pm
Chair: Junior Barrera, Univ. de Sao Paulo (Brazil)

SESSION 3  Mon. 8:35 to 9:50 am
Watermarking and Security
Chair: James F. Scholl, College of Optical Sciences/Univ. of Arizona

Adaptive model and neural network based watermark identification, L. McLaughlin, Texas A&M Univ.; M. Merebuegug, Texas A&M Univ., Corpus Christi  
Compressed versus uncompressed domain video watermarking, S. A. Duta, M. P. Mitra, F. Peihe, Institut National des Telecommunications (France)  
Adaptive fingerprint enhancement and identification, L. McLaughlin, Texas A&M Univ.; M. Merebuegug, Texas A&M Univ., Corpus Christi  

SESSION 4  Mon. 10:25 am to 12:05 pm
Pattern Recognition and Analysis
Chair: Junior Barrera, Univ. de Sao Paulo (Brazil)

Generation of lattice independent vector sets for pattern recognition applications, G. Urgel-Serrano, J. C. Vazquez-Navarro, Instituto Nacional de Astrofisica, Optica y Electrinica (Mexico)  
The validity of pyramid K-means, D. E. Tamir, Texas State Univ. San Marcos; C. Y. Park, Kwandong University (South Korea); W. Yoo, Gihang University (South Korea)  
Two evolutionary algorithms optimize clusters and automate feature selection in multispectral images, G. H. Burgin, D. B. Fogg, W. Pono, Natural Selection, Inc.; J. C. Jarolla, Surface Optics Corp.; P. Kajey, Lockheed Martin  
Lunch Break

SESSION 5  Mon. 2:30 to 3:15 pm
Image Analysis in Medicine
Chair: Gerhard X. Pitter, Univ. of Florida

Real-time analysis of biomolecular interactions in SPR imaging, N. Franzen, C. I. Fellita, Institut National des Telecommunications (France); M. Mazcach, Institut de Chimie des SUBstances Naturelles (France); F. Peihe, Institut National des Telecommunications (France)  
Automated diagnosis of interstitial lung diseases (ILD) and emphysema in MDCT imaging, C. I. Fellita, K. Cheng Chen, Institut National des Telecommunications, (France); P. Brillet, Autonome Hospital (France); F. Peihe, Institut National des Telecommunications (France)  
Robust discriminant wavelet packets for manigomia image classification, H. A. Qureshi, N. M. Fugood, Univ. of Warwick (United Kingdom); T. W. Nalmpamp, Univ. of Bielefeld (Germany); V. Hans, Evangelisches Krankenhaus Bielefeld GmbH (Germany)  

Courses of Related Interest

See pages 162-187 for full course descriptions.

SESSION 6  Mon. 3:45 to 5:00 pm
Pattern Recognition and Multimedia
Chair: Jaakko T. Astola, Tampere Univ. of Technology (Finland)

Recognition of photon patterns in advanced Compton telescopes, A. Zoglauer, Univ. of California/Berkeley; R. Andriukaitis, J. Karban, Max-Planck-Institut fur extraterrestrische Physik (Germany); S. E. Briggs, Univ. of California/Berkeley  
Interactive TV on parliament session, J. Royer, Institut National des Telecommunications (France); H. Nguyen, Alcatel (France); M. Preza, F. Peihe, Institut National des Telecommunications (France); O. Martinet, Alcatel (France)  
A crop identification model from remote sensing image, A. Jing, B. Yeh, Chinese Academy of Agricultural Sciences (China)  

Posters-Monday
Poster authors will begin displaying posters after 10:00 am on Monday morning. A poster session, with authors present at their posters, will be held Monday evening from 6:00 to 7:30 pm. Light refreshments will be served.