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

Conference Chairs: **Mark S. Schmalz**, Univ. of Florida; **Gerhard X. Ritter**, Univ. of Florida; **Junior Barrera**, Univ. de São 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); **Abdelsalam A. Helal**, Univ. of Florida; **Lifford McLauchlan**, Texas A&M Univ.; **Daniel S. Myers**, Sandia National Labs.; **James F. Scholl**, College of Optical Sciences/The Univ. of Arizona

Tuesday 12 August

Introductory Remarks
Room: TBD .... Tues. 8:30 to 8:35 am

Mark Schmalz, *Conference Chair*

SESSION 1: Compression I
Session Chair: **Mark L. Fowler**, Binghamton Univ.
Room: Conv. Ctr. 5B .... Tues. 8:35 to 10:15 am

8:35 am: **Data compression in emitter location systems via sensor pairing and selection**, Xi Hu, Mark L. Fowler, Binghamton Univ. [7075-01]

9:00 am: **Impact of signal model on data compression for TDOA/FDOA emitter location**, Mark L. Fowler, Xi Hu, Binghamton Univ. [7075-02]

9:25 am: **Performance analysis of object-based video compression**, Mark S. Schmalz, Univ. of Florida [7075-03]

9:50 am: **Impact of wavelet types on image data characteristics during compression**, Daniel S. Myers, Sandia National Labs. [7075-04]

Coffee Break.. 10:15 to 10:35 am

SESSION 2: Compression II
Session Chair: **Mark S. Schmalz**, Univ. of Florida
Room: Conv. Ctr. 5B .... Tues. 10:35 to 11:50 am

10:35 am: **Perceptual optimization of image coding based on a HVS model with eye tracking**, Karel Fliegel, Czech Technical Univ. in Prague (Czech Republic) [7075-05]

11:00 am: **Analysis of compression of 4D volumetric medical image datasets using multi-view (MVC) video coding methods**, Uwe-Erik Martin, Siemens Medical Solutions (Germany); André Kaup, Friedrich-Alexander-Univ. Erlangen-Nürnberg (Germany) [7075-06]

11:25 am: **Permutation-based codebook approach**, Ziya Arnavut, Meral Arnavut, SUNY Fredonia [7075-08]

Lunch/Exhibition Break... 11:50 am to 1:30 pm

SESSION 3: Watermarking and Authentication I
Session Chair: **James F. Scholl**, College of Optical Sciences/The Univ. of Arizona
Room: Conv. Ctr. 5B .... Tues. 1:30 to 2:45 pm

1:30 pm: **A comparative study on insertion strategies in MPEG 4 AVC watermarking**, Sorin A. Duta, Mihai P. Mitrea, Maher Belhaj, Françoise J. Prêteux, Institut National des Télécommunications (France) [7075-09]

1:55 pm: **GLCM and neural network based watermark identification**, Lifford McLauchlan, Texas A&M Univ.; Mehrube Mehrubeoglu, Texas A&M Univ.-Corpus Christi [7075-10]

2:20 pm: **Neural network-based watermark embedding and identification**, Lifford McLauchlan, Texas A&M Univ.; Mehrube Mehrubeoglu, Texas A&M Univ.-Corpus Christi [7075-11]

Coffee Break..2:45 to 3:15 pm

SESSION 4: Watermarking and Authentication II
Session Chair: **Lifford McLauchlan**, Texas A&M Univ.
Room: Conv. Ctr. 5B .... Tues. 3:35 to 4:25 pm

3:35 pm: **Theoretical limits versus practical solutions in DWT video watermarking**, Corneliu Dumitru, Mihai P. Mitrea, Françoise J. Prêteux, Institut National des Télécommunications (France) [7075-12]

4:00 pm: **A watermarking benchmark and tutorial tool for Matlab**, Kevin Heylen, Hogeschool Antwerpen (Belgium); Tim Dams, Hogeschool Antwerpen (Belgium) and Vrije Univ. Brussel (Belgium); Ann Dooms, Vrije Univ. Brussel (Belgium) [7075-13]

Panel Discussion
Room: TBD .... Tues. 4:30 to 5:00 pm

Wednesday 13 August

Introductory Remarks
Room: TBD ....Wed. 8:30 to 8:35 am

Gerhard Ritter, *Conference Chair*

SESSION 5: Error Analysis
Session Chair: **Mark S. Schmalz**, Univ. of Florida
Room: Conv. Ctr. 5B ....Wed. 8:30 to 9:45 am

8:30 am: **The optimum approximation of an orthogonal expansion having bounded higher order correlations of stochastic coefficients**, Yuichi Kida, Ohu Univ. (Japan); Takuro Kida, Nihon Univ. (Japan) [7075-15]

8:55 am: **Simultaneous minimization of various worst case measures of error in FIR filter bank**, Yuichi Kida, Ohu Univ. (Japan); Takuro Kida, Nihon Univ. (Japan) [7075-16]

9:20 am: **Exact accounting of bit errors in floating-point computations**, Mark S. Schmalz, Univ. of Florida [7075-17]

Coffee Break.. 9:50 to 10:10 am

SESSION 6: Hyperspectral Imaging and Processing
Session Chair: **Gerhard X. Ritter**, Univ. of Florida
Room: Conv. Ctr. 5B ....Wed. 10:10 to 11:50 am

10:10 am: **Hyperspectral imaging of non-stellar astronomical objects**, James F. Scholl, College of Optical Sciences/The Univ. of Arizona; E. Keith Hege, MKS Imaging Technology, LLC and The Univ. of Arizona/Steward Observatory; Michael Lloyd-Hart, The Univ. of Arizona/Steward Observatory; Daniel G. O'Connell, Hnu Photonics [7075-19]

10:35 am: **A novel approach for fuzzy edge detection using Type II fuzzy sets**, Vamsi Krishna Madasu, The Univ. of Queensland (Australia); Hanmandlu Madasu, Indian Institute of Technology Delhi (India); Shantaram Vasikarla, American InterContinental Univ.-Los Angeles [7075-20]

11:00 am: **The compensation method for quantitative observation of multicolor fluorescence with non-linear mapping**, Soichiro Morishita, The Univ. of Tokyo (Japan); Hideo Yokota, The Institute of Physical and Chemical Research (Japan); Hajime Asama, The Univ. of Tokyo (Japan); Ryutaro Himeno, The Institute of Physical and Chemical Research (Japan); Taketoshi Mishima, Saitama Univ. (Japan) [7075-22]

11:25 am: **A new quality assessment index for compressed remote sensing image**, Liang Zhai, Chinese Academy of Surveying and Mapping (China) [7075-23]

Panel Discussion
Room: TBD ....Wed. 11:50 am

Posters-Wednesday
Room: Conv. Ctr. 5B .... Wed. 5:30 to 7:00 pm

Poster authors will begin displaying posters after 10:00 am Wednesday morning. A poster session, with authors present at their posters, will be held Wednesday evening from 5:30 to 7:00 pm. Light refreshments will be served.

Poster Setup
Poster presenters must set up their posters between 10:00 am and 5:00 pm on Wednesday. Poster presenters who have not set up by 5:00 pm on Wednesday will be considered a "no show" and their manuscript will not be published. Presenters must remove their posters immediately after the poster session. Posters not removed will be considered unwanted and will be discarded. SPIE assumes no responsibility for posters left up after the end of each poster session.

Dynamic mixing kernels in Gaussian Mixture Classifier for Hyperspectral Classification, Vikram Jayaram, University of Texas at El Paso [7075-29]

Video noise reduction employing a Bessel k-form prior with local parameters for modeling contourlet coefficients, Hossein Rabbani, Amirkabir Univ. of Technology (Iran) [7075-28]

Finding the temperature using image analysis techniques, Ana Oprisan, Sorinel Oprisan, College of Charleston; John Hegseth, Univ. of New Orleans; Yves Garrabos, Institut de Chimie de la Matière Condensée de Bordeaux (France); Daniel Beysens, Lab. de Physique et Mécanique des Milieux Hétérogènes (France) [7075-27]

Contourlet transform-based algorithm for enhancement of capillary microscopic images, Yuan Chen, Zhimin Zhao, Lei Liu, Min Zheng, Nanjing Univ. of Aeronautics and Astronautics (China) [7075-24]

A Radix 4 based system for information theory, Bradley S. Tice, Advanced Human Design [7075-32]

A comparison of a Radix 2 and a Radix 5 based systems, Bradley S. Tice, Advanced Human Design [7075-26]

The analysis of binary, ternary and quaternary-based systems for communications theory, Bradley S. Tice, Advanced Human Design [7075-30]

Adaptive attacks against DCT-based watermarking, Tao Zhang, Tsinghua Univ. (China) [7075-31]