

# IEEE TRANSACTIONS ON SIGNAL PROCESSING

A PUBLICATION OF THE IEEE SIGNAL PROCESSING SOCIETY



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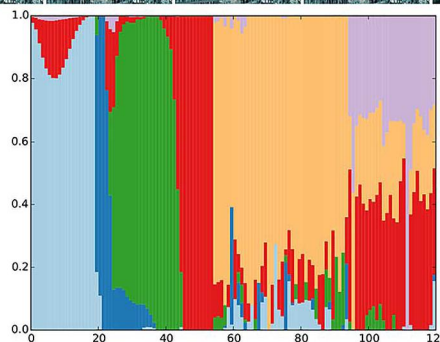
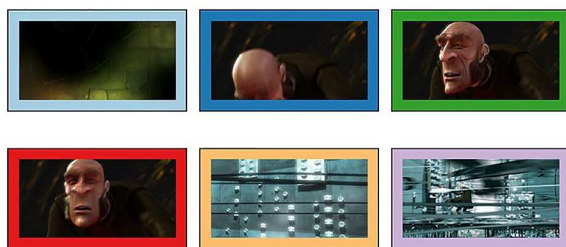
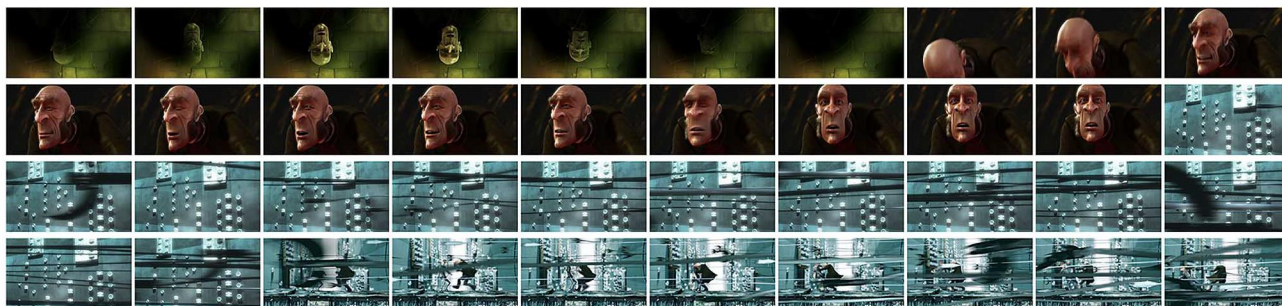
MAY 1, 2016  
MAY 15, 2016  
JUNE 1, 2016  
JUNE 15, 2016

VOLUME 64  
VOLUME 64  
VOLUME 64  
VOLUME 64

NUMBER 9  
NUMBER 10  
NUMBER 11  
NUMBER 12

ITPRED

(ISSN 1053-587X)



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*For the May 1, 2016 issue, see p. 2189 for Table of Contents*  
*For the May 15, 2016 issue, see p. 2459 for Table of Contents*  
*For the June 1, 2016 issue, see p. 2726 for Table of Contents*  
*For the June 15, 2016 issue, see p. 3004 for Table of Contents*

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## REGULAR PAPERS

Iterative Methods for Subspace and DOA Estimation in Nonuniform Noise .....	<i>B. Liao, S.-C. Chan, L. Huang, and C. Guo</i>	3008
Modeling of the Fading Statistics of Wireless Sensor Network Channels in Industrial Environments .....	<i>T. Olofsson, A. Ahlén, and M. Gidlund</i>	3021
Mismatch in the Classification of Linear Subspaces: Sufficient Conditions for Reliable Classification .....	<i>J. Sokolić, F. Renna, R. Calderbank, and M. R. D. Rodrigues</i>	3035
Optimal Discrete Gaussian Function: The Closed-Form Functions Satisfying Tao's and Donoho's Uncertainty Principle With Nyquist Bandwidth .....	<i>S.-C. Pei and K.-W. Chang</i>	3051
Estimation of Fourier Transform Using Alias-Free Hybrid-Stratified Sampling .....	<i>A. Tarczynski and B. I. Ahmad</i>	3065
Markov Chain Monte Carlo Inference of Parametric Dictionaries for Sparse Bayesian Approximations .....	<i>T. Chaspari, A. Tsiartas, P. Tsilifis, and S. Narayanan</i>	3077

(Contents Continued on Page 3005)

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Performance Analysis of Full-Duplex-MRC-MIMO With Self-Interference Cancellation Using Null-Space-Projection ..	3093
..... <i>M. A. Ahmed, C. C. Tsimenidis, and A. F. Al Rawi</i>	
Wideband Spectrum Sensing on Real-Time Signals at Sub-Nyquist Sampling Rates in Single and Cooperative Multiple Nodes ..	3106
..... <i>Z. Qin, Y. Gao, M. D. Plumbley, and C. G. Parini</i>	
Asynchronous Distributed ADMM for Large-Scale Optimization—Part I: Algorithm and Convergence Analysis .....	3118
..... <i>T.-H. Chang, M. Hong, W.-C. Liao, and X. Wang</i>	
Asynchronous Distributed ADMM for Large-Scale Optimization—Part II: Linear Convergence Analysis and Numerical Performance .....	3131
..... <i>T.-H. Chang, W.-C. Liao, M. Hong, and X. Wang</i>	
The Sample Complexity of Weighted Sparse Approximation .....	3145
..... <i>B. Bah and R. Ward</i>	
Discrete Laguerre Gaussian Transforms and Their Applications .....	3156
..... <i>S.-C. Pei, C.-L. Liu, and Y.-C. Lai</i>	
Operating Characteristic and Average Sample Number of Binary and Multi-Hypothesis Sequential Probability Ratio Test .....	3167
..... <i>Y. Liu, Y. Gao, and X. R. Li</i>	
Trainlets: Dictionary Learning in High Dimensions .....	3180
..... <i>J. Sulam, B. Ophir, M. Zibulevsky, and M. Elad</i>	
Variational Bayes Group Sparse Time-Adaptive Parameter Estimation With Either Known or Unknown Sparsity Pattern ..	3194
..... <i>K. E. Themelis, A. A. Rontogiannis, and K. D. Koutroumbas</i>	
Adaptive Detection of Point-Like Targets in Spectrally Symmetric Interference .....	3207
..... <i>A. De Maio, D. Orlando, C. Hao, and G. Foglia</i>	
A 2-SPRT Based Approach to Multiple-Model Hypothesis Testing for Multi-Distribution Detection .....	3221
..... <i>B. Liu, J. Lan, and X. R. Li</i>	
Low-Complexity Robust MISO Downlink Precoder Design Under Imperfect CSI .....	3237
..... <i>M. Medra, Y. Huang, W.-K. Ma, and T. N. Davidson</i>	
Context-Aided Inertial Navigation via Belief Condensation .....	3250
..... <i>J. Prieto, S. Mazuelas, and M. Z. Win</i>	
Performance Analysis of Co-Phased Combining for Achieving Binary Consensus Over Fading Wireless Channels With Imperfect CSI .....	3262
..... <i>V. Y. Ramakrishnaiah and C. R. Murthy</i>	
<hr/>	
EDICS—Editors’ Information Classification Scheme .....	3274
Information for Authors .....	3275

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About the Cover: The cover depicts extracting representative frames from a video (<http://www.elephantsdream.org>) as shown in Figure 11 of the paper “Compressed Nonnegative Matrix Factorization Is Fast and Accurate” by Tepper and Sapiro on page 2269. The video resolution is  $640 \times 360$  pixels and contains 120 frames (5 seconds). The top block displays 40 uniformly sampled frames. The authors build a  $691,200 \times 120$  matrix by vectorizing one frame per column (each frame has 3 color channels), and then use SNMF with compression to extract six representative frames (bottom left). The bottom right shows the (normalized) columns of the matrix  $\mathbf{H}$  in Step (3), i.e., the reconstruction coefficients. It took 2.18 seconds to compute the result with relative errors of 0.2714 and of 0.4240 with respect to the compressed and the original matrices, respectively.