

## PROGRAM

### Data Compression Conference (DCC 2010)

*Sponsored by Brandeis University.*

*Proceedings published by Conference Publishing Services (CPS).*

**Snowbird, Utah**

**March 24-26, 2010**

#### PROGRAM COMMITTEE

James A. Storer, *Brandeis University* (DCC Chair)  
Michael W. Marcellin, *University of Arizona* (Committee Chair)  
Henrique Malvar, *Microsoft* (Submissions Chair)  
James E. Fowler, *Mississippi State University* (Publicity Chair)  
Alberto Apostolico, *Georgia Institute of Technology / Università di Padova*  
Ali Bilgin, *University of Arizona*  
Charles D. Creusere, *New Mexico State University*  
Hanying Feng, *Brion Technologies*  
Vivek Goyal, *Massachusetts Institute of Technology*  
Robert M. Gray, *Stanford University*  
Sheila Hemami, *Cornell University*  
Hamid Jafarkhani, *University of California Irvine*  
Tamas Linder, *Queen's University*  
Giovanni Motta, *Hewlett-Packard*  
Gonzalo Navarro, *University of Chile*  
Majid Rabbani, *Eastman Kodak Co.*  
Yuriy Reznik, *Qualcomm*  
Serap Savari, *Texas A&M University*  
Khalid Sayood, *University of Nebraska*  
Joan Serra-Sagrista, *Universitat Autònoma Barcelona*  
Dafna Sheinwald, *IBM Haifa Lab*  
Marcelo Weinberger, *HP Laboratories*  
Feng Wu, *Microsoft Research Asia*  
Ram Zamir, *Tel Aviv University*

#### SCHEDULE OVERVIEW:

##### ***Tuesday Evening, March 23:***

Registration and Reception

##### ***Wednesday, March 24:***

Morning: Technical Sessions 1, 2

Mid-Day: Invited Presentation

Afternoon: Technical Sessions 3, 4

##### ***Thursday, March 25:***

Morning: Technical Sessions 5, 6

Mid-Day: Technical Sessions 7, 8

Afternoon: Poster Session and Reception

##### ***Friday, March 26:***

Morning: Technical Sessions 9, 10, 11

## TUESDAY EVENING

Registration / Reception, 7:00-10:00pm (Golden Cliff Room)

## WEDNESDAY MORNING

### SESSION 1

<b>8:00am:</b> Stationary and Trellis Encoding for IID Sources and Simulation.....	3
<i>Mark Z. Mao and Robert M. Gray</i> Stanford University	
<b>8:20am:</b> Bounding the Rate Region of Vector Gaussian Multiple Descriptions with Individual and Central Receivers .....	13
<i>Guoqiang Zhang, W. Bastiaan Kleijn, and Jan Østergaard<sup>†</sup></i> KTH - Royal Institute of Technology, <sup>†</sup> Aalborg University	
<b>8:40am:</b> Arbitrary Directional Edge Encoding Schemes for the Operational Rate-Distortion Optimal Shape Coding Framework.....	20
<i>Zhongyuan Lai, Junhuan Zhu, Zhou Ren, Wenyu Liu, and Baolan Yan<sup>†</sup></i> Huazhong University of Science and Technology, <sup>†</sup> Huazhong Normal University	
<b>9:00am:</b> Maximum Mutual Information Vector Quantization of Log-Likelihood Ratios for Memory Efficient HARQ Implementations .....	30
<i>Matteo Danieli, Søren Forchhammer, Jakob Dahl Andersen, Lars P. B. Christensen<sup>†</sup>, and Søren Skovgaard Christensen<sup>†</sup></i> Technical University of Denmark, <sup>†</sup> Nokia Denmark	
<b>9:20am:</b> An MCMC Approach to Lossy Compression of Continuous Sources .....	40
<i>Dror Baron and Tsachy Weissman<sup>†</sup></i> Technion – Israel Institute of Technology, <sup>†</sup> Stanford University	
<b>9:40am:</b> Rate Distortion Bounds for Binary Erasure Source Using Sparse Graph Codes .....	49
<i>Grégory Demay, Vishwambhar Rathi, and Lars K. Rasmussen</i> KTH - Royal Institute of Technology	

**Break:** 10:00am - 10:20am

### SESSION 2

<b>10:20am:</b> Local Average-Based Model of Probabilities for JPEG2000 Bitplane Coder .....	59
<i>Francesc Aulí-Llinàs</i> Universitat Autònoma de Barcelona, Spain	
<b>10:40am:</b> On the Adaptive Coefficient Scanning of JPEG XR/HD Photo .....	69
<i>Vanessa Testoni, Max H. M. Costa, Darko Kirovski<sup>†</sup>, and Henrique S. Malvar<sup>†</sup></i> University of Campinas - Unicamp, <sup>†</sup> Microsoft Research	
<b>11:00am:</b> Spatial Constant Quantization in JPEG XR is Nearly Optimal .....	79
<i>Thomas Richter</i> University of Stuttgart	
<b>11:20am:</b> Subsampling-Adaptive Directional Wavelet Transform for Image Coding .....	89
<i>Jizheng Xu and Feng Wu</i> Microsoft Research Asia	
<b>11:40am:</b> Smart JPIP Proxy Server with Prefetching Strategies .....	99
<i>José Lino Monteagudo-Pereira, Francesc Aulí-Llinàs, Joan Serra-Sagrìstà, and Joan Bartrina-Rapesta</i> Universitat Autònoma de Barcelona, Spain	
<b>12:00noon:</b> A Lossless Circuit Layout Image Compression Algorithm for Maskless Lithography Systems .....	109
<i>Jeehong Yang and Serap A. Savari<sup>†</sup></i> University of Michigan, <sup>†</sup> Texas A&M University	

**Lunch Break:** 12:20pm - 2:30pm

**WEDNESDAY MID-DAY INVITED PRESENTATION**

2:30pm - 3:30pm

**Block-Based Compressed Sensing of Images and Video**

*James E. Fowler, Mississippi State University*

Compressed sensing has received significant attention in recent years, primarily as a mathematical phenomenon. There has been, on the other hand, significantly less attention paid towards incorporation of compressed-sensing methodology into practical signal-processing applications. In this talk, we consider compressed sensing in the context of several image and video applications. The foundations of our discussion rest on a recent block-based strategy for compressed-sensing recovery of a single still image. In our approach, block-based random image sampling is coupled with a projection-driven compressed-sensing recovery that encourages sparsity in the domain of an image transform simultaneously with a smooth reconstructed image. The proposed approach yields images with quality that matches or exceeds that produced by a popular, yet computationally expensive, technique which minimizes total variation. This still-image reconstruction is then extended to multiview image sets, incorporating inter-image disparity compensation into the image-recovery process in order to take advantage of the high degree of inter-image correlation common to multiview scenarios. Finally, a similar approach is adopted for the reconstruction of video in which each frame has been subject to block-based random projections, and motion estimation and motion compensation across an entire group of frames informs the compressed-sensing recovery process.

**Break:** 3:30 - 4:00pm

**WEDNESDAY AFTERNOON**

**SESSION 3**

**4:00pm:** Estimation-Theoretic Delayed Decoding of Predictively Encoded

Video Sequences ..... 119

*Jingning Han, Vinay Melkote, and Kenneth Rose*

University of California, Santa Barbara

**4:20pm:** Causal Transmission of Colored Source Frames over a Packet Erasure Channel ..... 129

*Ying-zong Huang, Yuval Kochman, and Gregory W. Wornell*

Massachusetts Institute of Technology

**4:40pm:** Spatially Scalable Video Coding Based on Hybrid Epitomic Resizing ..... 139

*Qijun Wang, Ruimin Hu, and Zhongyuan Wang*

Wuhan University

**5:00pm:** Information Flows in Video Coding ..... 149

*Jia Wang and Xiaolin Wu<sup>†</sup>*

Shanghai Jiao Tong University, <sup>†</sup>McMaster University

**Break:** 5:20 - 5:40pm

**SESSION 4**

**5:40pm:** Optimized Analog Mappings for Distributed Source-Channel Coding ..... 159

*Emrah Akyol, Kenneth Rose, and Tor Ramstad<sup>†</sup>*

University of California, Santa Barbara, <sup>†</sup>Norwegian University of Science and Technology

**6:00pm:** A SAT-Based Scheme to Determine Optimal Fix-Free Codes ..... 169

*Navid Abedini, Sunil P. Khatri, and Serap A. Savari*

Texas A&M University

**6:20pm:** Efficient Algorithms for Constructing Optimal Bi-directional Context Sets ..... 179

*Fernando Fernández, Alfredo Viola, and Marcelo J. Weinberger<sup>†</sup>*

Universidad de la República, Montevideo, Uruguay, <sup>†</sup>Hewlett Packard Laboratories

**6:40pm:** On Computation of Performance Bounds of Optimal Index Assignment ..... 189

*Xiaolin Wu, Hans D. Mittelmann<sup>†</sup>, Xiaohan Wang<sup>‡</sup>, and Jia Wang<sup>♦</sup>*

McMaster University, <sup>†</sup>Arizona State University, <sup>‡</sup>Research in Motion,

<sup>♦</sup>Shanghai Jiaotong University

## THURSDAY MORNING

### SESSION 5

<b>8:00am:</b> A New Searchable Variable-to-Variable Compressor .....	199
<i>Nieves R. Brisaboa, Antonio Fariña, Juan R. López, Gonzalo Navarro<sup>†</sup>, and Eduardo R. López</i> University of A Coruña, <sup>†</sup> University of Chile	
<b>8:20am:</b> Neural Markovian Predictive Compression: An Algorithm for Online Lossless Data Compression .....	209
<i>Erez Shermer<sup>†</sup>, Mireille Avigal<sup>†</sup>, and Dana Shapira<sup>†,‡</sup></i> <sup>†</sup> The Open University of Israel, <sup>‡</sup> Ashkelon Academic College	
<b>8:40am:</b> An Efficient Algorithm for Almost Instantaneous VF Code Using Multiplexed Parse Tree .....	219
<i>Satoshi Yoshida and Takuya Kida</i> Hokkaido University	
<b>9:00am:</b> Lossless Data Compression via Substring Enumeration .....	229
<i>Danny Dubé and Vincent Beaudoin</i> Université Laval	
<b>9:20am:</b> LZ77-Like Compression with Fast Random Access .....	239
<i>Sebastian Kreft and Gonzalo Navarro</i> Univeristy of Chile	
<b>9:40am:</b> Bidirectional Delta Files .....	249
<i>Dana Shapira and Michael Kats<sup>†</sup></i> Ashkelon Academic College, <sup>†</sup> The Open University of Israel	

**Break:** 10:00am - 10:20am

### SESSION 6

<b>10:20am:</b> Bandwidth Expansion in a Simple Gaussian Sensor Network Using Feedback .....	259
<i>Anna N. Kim and Tor A. Ramstad</i> Norwegian University of Science and Technology	
<b>10:40am:</b> A Flexible Multiple Description Coding Scheme Based on Rateless Codes .....	269
<i>O. Y. Bursalioglu and G. Caire</i> University of Southern California	
<b>11:00am:</b> Fixed-Lag Smoothing for Low-Delay Predictive Coding with Noise Shaping for Lossy Networks .....	279
<i>Thomas Arildsen, Jan Østergaard, Manohar N. Murthi<sup>†</sup>, Søren Vang Andersen, and Søren Holdt Jensen</i> Aalborg University, <sup>†</sup> University of Miami	
<b>11:20am:</b> Rate-Compatible Slepian-Wolf Coding with Short Non-Binary LDPC Codes .....	288
<i>Kenta Kasai, Takayuki Tsujimoto, Ryutaroh Matsumoto, and Kohichi Sakaniwa</i> Tokyo Institute of Technology	
<b>11:40am:</b> A Systematic Distributed Quantizer Design Method with an Application to MIMO Broadcast Channels .....	297
<i>Erdem Koyuncu and Hamid Jafarkhani</i> University of California, Irvine	
<b>12:00noon:</b> Scalar Quantizer Design for Noisy Channel with Decoder Side Information .....	307
<i>Sepideh Shamaie and Farshad Lahouti</i> University of Tehran	

**Lunch Break:** 12:20pm - 1:20pm

## **THURSDAY MID-DAY**

### **SESSION 7**

- 1:20pm:** A Symbolic Dynamical System Approach to Lossy Source Coding with Feedforward ..... 317  
*Ofer Shayevitz*  
University of California, San Diego
- 1:40pm:** When Huffman Meets Hamming: A Class of Optimal Variable-Length  
Error Correcting Codes ..... 327  
*Serap A. Savari and Jörg Kliewer<sup>†</sup>*  
Texas A&M University, <sup>†</sup>New Mexico State University
- 2:00pm:** Lossless Compression Based on the Sequence Memoizer ..... 337  
*Jan Gasthaus, Frank Wood<sup>†</sup>, and Yee Whye Teh*  
UCL, <sup>†</sup>Columbia University
- 2:20pm:** A Similarity Measure Using Smallest Context-Free Grammars ..... 346  
*Daniele Cerra<sup>†</sup> and Mihai Datcu<sup>†,‡</sup>*  
<sup>†</sup>German Aerospace Center (DLR), <sup>‡</sup>Télécom Paris

**Break:** 2:40pm - 3:00pm

### **SESSION 8**

- 3:00pm:** On the Systematic Measurement Matrix for Compressed Sensing  
in the Presence of Gross Errors ..... 356  
*Zhi Li, Feng Wu<sup>†</sup>, and John Wright<sup>†</sup>*  
Stanford University, <sup>†</sup>Microsoft Research Asia
- 3:20pm:** Xampling: Analog Data Compression ..... 366  
*Moshe Mishali and Yonina C. Eldar*  
Technion - Israel Institute of Technology
- 3:40pm:** Tanner Graph Based Image Interpolation..... 376  
*Ruiqin Xiong and Wen Gao*  
Peking University

**Break:** 4:00pm - 4:30pm

## **THURSDAY AFTERNOON**

### **POSTER SESSION AND RECEPTION**

4:30-7:30pm

In the Golden Cliff Room

(Titles are listed at the end this program;  
abstracts of each presentation appear in the proceedings.)

## FRIDAY MORNING

### SESSION 9

- 8:00am:** Lossless Reduced Cutset Coding of Markov Random Fields ..... 386  
*Matthew G. Reyes and David L. Neuhoff*  
University of Michigan
- 8:20am:** gFPC: A Self-Tuning Compression Algorithm..... 396  
*Martin Burtscher and Paruj Ratanaworabhan<sup>†</sup>*  
University of Texas at Austin, <sup>†</sup>Kasetsart University
- 8:40am:** Advantages of Shared Data Structures for Sequences of Balanced Parentheses ..... 406  
*Simon Gog and Johannes Fischer<sup>†</sup>*  
Universität Ulm, <sup>†</sup>Universität Tübingen
- 9:00am:** Segment-Parallel Predictor for FPGA-Based Hardware Compressor and Decompressor  
of Floating-Point Data Streams to Enhance Memory I/O Bandwidth ..... 416  
*Kentaro Sano, Kazuya Katahira, and Satoru Yamamoto*  
Tohoku University
- 9:20am:** I/O-Efficient Compressed Text Indexes: From Theory to Practice ..... 426  
*Sheng-Yuan Chiu, Wing-Kai Hon, Rahul Shah<sup>†</sup>, and Jeffrey Scott Vitter<sup>‡</sup>*  
National Tsing Hua University, <sup>†</sup>Louisiana State University, <sup>‡</sup>Texas A&M University

**Break:** 9:40am - 10:00am

### SESSION 10

- 10:00am:** Enhanced Adaptive Interpolation Filters for Video Coding ..... 435  
*Yan Ye, Giovanni Motta<sup>†</sup>, and Marta Karczewicz<sup>‡</sup>*  
Dolby Laboratories, <sup>†</sup>Hewlett Packard Corp., <sup>‡</sup>Qualcomm Inc.
- 10:20am:** Packet Dropping for Widely Varying Bit Reduction Rates  
Using a Network-Based Packet Loss Visibility Model ..... 445  
*Ting-Lan Lin, Jihyun Shin, and Pamela Cosman*  
University of California, San Diego
- 10:40am:** Auto Regressive Model and Weighted Least Squares Based Packet  
Video Error Concealment..... 455  
*Yongbing Zhang, Xinguang Xiang, Siwei Ma<sup>†</sup>, Debin Zhao, and Wen Gao<sup>†</sup>*  
Harbin Institute of Technology, <sup>†</sup>Peking University
- 11:00am:** A Hybrid Media Transmission Scheme for Wireless VoIP ..... 465  
*Ala' Khalifeh and Homayoun Yousefi'zadeh*  
University of California, Irvine
- 11:20am:** Low-Complexity PARCOR Coefficient Quantizer and Prediction Order Estimator  
for G.711.0 (Lossless Speech Coding) ..... 475  
*Yutaka Kamamoto, Takehiro Moriya, and Noboru Harada*  
NTT Communication Science Laboratories

**Break:** 11:40am - 12:00noon

### SESSION 11

- 12:00noon:** Shape Recognition Using Vector Quantization ..... 484  
*Antonella Di Lillo, Giovanni Motta<sup>†</sup>, and James A. Storer*  
Brandeis University, <sup>†</sup>Hewlett-Packard Corp.
- 12:20pm:** Optimization of Overlapped Tiling for Efficient 3D Image Retrieval ..... 494  
*Zihong Fan and Antonio Ortega*  
University of Southern California
- 12:40am:** Depth Compression of 3D Object Represented by Layered Depth Image ..... 504  
*Sang-Young Park and Seong-Dae Kim*  
KAIST

# Poster Session

(listed alphabetically by first author)

Modelling Parallel Texts for Boosting Compression .....	517
<i>Joaquín Adiego, Miguel A. Martínez-Prieto, Javier E. Hoyos-Torío, and Felipe Sánchez-Martínez<sup>†</sup></i>	
Universidad de Valladolid, <sup>†</sup> Universitat d'Alacant	
Lossless Compression of Maps, Charts, and Graphs via Color Separation .....	518
<i>Saif alZahir and Arber Borici</i>	
University of N. British Columbia	
Local Modeling for WebGraph Compression .....	519
<i>Vo Ngoc Anh and Alistair Moffat</i>	
University of Melbourne	
Modeling the Quantization Staircase Function .....	520
<i>Salman Aslam, Aaron Bobick, and Christopher F. Barnes</i>	
Georgia Institute of Technology	
Dual Contribution of JPEG 2000 Images for Unidirectional Links .....	521
<i>Jesús M. Barbero, Eugenio Santos, and Abraham Gutiérrez</i>	
Polytechnic University of Madrid	
Analysis of LDPC Codes for Compression of Nonuniform Sources with Side Information Using Density Evolution.....	522
<i>Raghunadh K. Bhattar, K. R. Ramakrishnan, and K. S. Dasgupta<sup>†</sup></i>	
IISc, <sup>†</sup> ISRO	
Multi-Resolution Mean-Shift Algorithm for Vector Quantization.....	523
<i>P. L. M. Bouteffroy<sup>†,‡</sup>, A. Bouzerdoum<sup>†</sup>, A. Beghdadi<sup>‡</sup>, and S. L. Phung<sup>†</sup></i>	
<sup>†</sup> University of Wollongong, <sup>‡</sup> Université Paris	
A Pseudo-Random Number Generator Based on LZSS.....	524
<i>Weiling Chang<sup>†</sup>, Binxing Fang<sup>†,‡</sup>, Xiaochun Yun<sup>‡</sup>, Shupeng Wang<sup>‡</sup>, and Xiangzhan Yu<sup>†</sup></i>	
<sup>†</sup> Harbin Institute of Technology, <sup>‡</sup> Chinese Academy of Science	
Inverted Index Compression for Scalable Image Matching .....	525
<i>David M. Chen, Sam S. Tsai, Vijay Chandrasekhar, Gabriel Takacs, Ramakrishna Vedantham<sup>†</sup>, Radek Grzeszczuk<sup>†</sup>, and Bernd Girod</i>	
Stanford University, <sup>†</sup> Nokia Research Center	
A Novel Frame Error Concealment Algorithm Based on Dynamic Texture Synthesis .....	526
<i>Hao Chen, Ruimin Hu, Dan Mao, and Zhongyuan Wang</i>	
Wuhan University	
Image Compression Using the DCT and Noiselets: A New Algorithm and Its Rate Distortion Performance.....	527
<i>Zhuoyuan Chen, Jiangtao Wen, Shiqiang Yang, Yuxing Han<sup>†</sup>, and John D. Villasenor<sup>†</sup></i>	
Tsinghua University, <sup>†</sup> University of California, Los Angeles	
The Non-Existence of Length-5 Perfect Slepian-Wolf Codes of Three Sources .....	528
<i>Samuel Cheng and Rick Ma<sup>†</sup></i>	
University of Oklahoma, <sup>†</sup> Hong Kong University of Science and Technology	

Robust Detection and Lossless Compression of the Foreground in Magnetic Resonance Images .....	529
<i>Andrés Corvetto, Ana Ruedin, and Daniel Acevedo</i>	
Universidad de Buenos Aires	
Tree Structure Based Analyses on Compressive Sensing for Binary Sparse Sources .....	530
<i>Jingjing Fu<sup>†,‡</sup>, Zhouchen Lin<sup>‡</sup>, Bing Zeng<sup>†</sup>, and Feng Wu<sup>‡</sup></i>	
<sup>†</sup> Hong Kong University of Science and Technology, <sup>‡</sup> Microsoft Research Asia	
Data Compression Based on a Dictionary Method Using Recursive Construction of T-Codes.....	531
<i>Kenji Hamano and Hirosuke Yamamoto</i>	
The University of Tokyo	
Lossless Compression of Mapped Domain Linear Prediction Residual for ITU-T Recommendation G.711.0 .....	532
<i>Noboru Harada, Yutaka Kamamoto, and Takehiro Moriya</i>	
NTT Communication Science Laboratories	
A Fast Compact Prefix Encoding for Pattern Matching in Limited Resources Devices.....	533
<i>S. Harrusi, A. Averbuch, and N. Rabin</i>	
Tel Aviv University	
Compressed Indexes for Approximate Library Management .....	534
<i>Wing-Kai Hon, Winson Wu, and Ting-Shuo Yang</i>	
National Tsing Hua University	
Two-Step Coding for High Definition Video Compression .....	535
<i>Wenfei Jiang, Wenyu Liu, Longin Jan Latecki<sup>†</sup>, Hui Liang, Changqing Wang, and Bing Feng</i>	
Huazhong University of Science and Technology, <sup>†</sup> Temple University	
Exploiting Wavelet-Domain Dependencies in Compressed Sensing .....	536
<i>Yookyung Kim, Mariappan S. Nadar<sup>†</sup>, and Ali Bilgin</i>	
University of Arizona, <sup>†</sup> Siemens Corporation	
Arbitrary ROI-Based Wavelet Video Coding .....	537
<i>Xuguang Lan, Nanning Zheng, Wen Ma, Miao Hui, and Jianru Xue</i>	
Xi'an Jiaotong University	
Optimum String Match Choices in LZSS .....	538
<i>Graham Little and James Diamond</i>	
Acadia University	
Error Resilient Dual Frame Motion Compensation with Uneven Quality Protection.....	539
<i>Da Liu, Debin Zhao, and Siwei Ma<sup>†</sup></i>	
Harbin Institute of Technology, <sup>†</sup> Peking University	
A New Approach to Time-Frequency Analysis.....	540
<i>Xiteng Liu</i>	
McMaster University	
An Integrated Algorithm for Fractional Pixel Interpolation and Motion Estimation of H.264 .....	541
<i>Jiyuan Lu<sup>†,‡</sup>, Peizhao Zhang<sup>†</sup>, Hongyang Chao<sup>†</sup>, and Paul Fisher<sup>♦</sup></i>	
<sup>†</sup> Sun Yat-Sen University, <sup>‡</sup> Guangdong University of Finance, <sup>♦</sup> Winston-Salem State University	
A Matrix Completion Approach to Reduce Energy Consumption in Wireless Sensor Networks .....	542
<i>Angshul Majumdar and Rabab K. Ward</i>	
University of British Columbia	
High-Order Text Compression on Hierarchical Edge-Guided.....	543
<i>Miguel A. Martínez-Prieto, Joaquín Adiego, Pablo de la Fuente, and Javier D. Fernández</i>	
University of Valladolid, Spain	

TreeZip: A New Algorithm for Compressing Large Collections of Evolutionary Trees .....	544
<i>Suzanne J. Matthews, Seung-Jin Sul, and Tiffani L. Williams</i>	
Texas A&M University	
Lossy Audio Compression via Compressed Sensing .....	545
<i>Rubem J. V. de Medeiros, Edmar C. Gurjão, and João M. de Carvalho</i>	
Federal University of Campina Grande	
Enhanced Lossless Coding Tools of LPC Residual for ITU-T G.711.0 .....	546
<i>Takehiro Moriya, Yutaka Kamamoto, and Noboru Harada</i>	
NTT Communication Science Laboratories	
Block Compressed Sensing of Images Using Directional Transforms .....	547
<i>Sungkwang Mun and James E. Fowler</i>	
Mississippi State University	
On the Overflow Probability of Fixed-to-Variable Length Codes with Side Information .....	548
<i>Ryo Nomura and Toshiyasu Matsushima<sup>†</sup></i>	
Aoyama Gakuin University, <sup>†</sup> Waseda University	
Data Compression Technology Dedicated to Distribution and Embedded Systems .....	549
<i>Junichi Odagiri, Noriko Itani, Yasuhiko Nakano, and David E. Culler<sup>†</sup></i>	
Fujitsu Laboratories LTD., <sup>†</sup> University of California, Berkeley	
Analysis of Amplitude Quantization in ACELP Excitation Coding .....	550
<i>Wisarn Patchoo, Thomas R. Fischer, Changho Ahn<sup>†</sup>, and Sangwon Kang<sup>†</sup></i>	
Washington State University, <sup>†</sup> Hanyang University	
LDPC Codes for Information Embedding and Lossy Distributed Source Coding .....	551
<i>Mina Sartipi</i>	
University of Tennessee at Chattanooga	
Horizontal Spatial Prediction for High Dimension Intra Coding .....	552
<i>Pin Tao, Wenting Wu, Chao Wang, Mou Xiao, and Jiangtao Wen</i>	
Tsinghua University	
Batch-Pipelining for H.264 Decoding on Multicore Systems .....	553
<i>Tang-Hsun Tu and Chih-Wen Hsueh</i>	
National Taiwan University	
Development of Optimum Lossless Compression Systems for Space Missions .....	554
<i>Alberto G. Villafranca<sup>†,‡</sup>, Jordi Portell<sup>†,♦</sup>, and Enrique García-Berro<sup>†,‡</sup></i>	
<sup>†</sup> Institut d'Estudis Espacials de Catalunya, <sup>‡</sup> Universitat Politècnica de Catalunya, <sup>♦</sup> Universitat de Barcelona	
Region Based Rate-Distortion Analysis for 3D Video Coding .....	555
<i>Qifei Wang, Xiangyang Ji, Qionghai Dai, and Naiyao Zhang</i>	
Tsinghua University	
Reconstruction of Sparse Binary Signals Using Compressive Sensing .....	556
<i>Jiangtao Wen, Zhuoyuan Chen, Shiqiang Yang, Yuxing Han<sup>†</sup>, and John D. Villasenor<sup>†</sup></i>	
Tsinghua University, <sup>†</sup> University of California, Los Angeles	
Fast Rate Distortion Optimized Quantization for H.264/AVC .....	557
<i>JiangTao Wen, Mou Xiao, Jianwen Chen, Pin Tao, and Chao Wang</i>	
Tsinghua University	
Theoretically Optimal Low-Density Parity-Check Code Ensemble for Gallager's Decoding Algorithm A.....	558
<i>Feng Wu and <sup>†</sup>Peiwen Yu</i>	
Microsoft Research Asia, <sup>†</sup> University of Science and Technology of China	
File-Size Preserving LZ Encoding for Reversible Data Embedding .....	559
<i>Hidetoshi Yokoo</i>	
Gunma University	