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PROGRAM

Data Compression Conference (DCC 2006)

Sponsored by Brandeis University.
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Snowbird, Utah
March 28-30, 2006

COMMITTEE:

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Serap Savari, University of Michigan
Khalid Sayood, University of Nebraska
Dafna Sheinwald, IBM Haifa Labs
James A. Storer, Brandeis University (Conference Chair)
Marcelo J. Weinberger, Hewlett-Packard Laboratories
Kenneth Zeger, University of California at San Diego

SCHEDULE OVERVIEW:

Monday Evening, March 27:
Registration and Reception

Tuesday, March 28:
Morning: Technical Sessions
Mid-Day: Invited Presentation
Afternoon: Technical Sessions

Wednesday, March 29:
Morning: Technical Sessions
Mid-Day: Technical Sessions
Afternoon: Poster Session and Reception

Thursday, March 30:
Morning: Technical Sessions

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

TUESDAY MORNING

SESSION 1

8:00am: "Non-Asymptotic Design of Finite State Universal Predictors for Individual Sequences" 3
Amir Ingber and Meir Feder
Tel Aviv University

8:20am: "Toward a Source Coding Theory for Sets" 13
Lav R. Varshney and Vivek K. Goyal
Massachusetts Institute of Technology

8:40am: "Adaptive Run-Length / Golomb-Rice Encoding of Quantized Generalized Gaussian Sources with Unknown Statistics" 23
Henrique S. Malvar
Microsoft Research

9:00am: "Encoding the ℓ_p Ball from Limited Measurements" 33
Emmanuel Candès and Justin Romberg
California Institute of Technology

9:20am: "New Lower and Upper Bounds on the Expected Length of Optimal One-to-One Codes" 43
Jay Cheng and Tien-Ke Huang
National Tsing Hua University

Break: 9:40am - 10:00am

SESSION 2

10:00am: "Time-Sharing Vs. Source-Splitting in the Slepian-Wolf Problem: Error Exponents Analysis" 53
Todd P. Coleman, Muriel Médard, and Michelle Effros[†]
Massachusetts Institute of Technology, [†]California Institute of Technology

10:20am: "On Efficient Quantizer Design for Robust Distributed Source Coding" 63
Ankur Saxena, Jayanth Nayak[†]*, and Kenneth Rose*
University of California, Santa Barbara, [†]IRISA/INRIA

10:40am: "Analysis of Multiple Antenna Systems with Finite-Rate Feedback Using High Resolution Quantization Theory" 73
Jun Zheng, Ethan Duni, and Bhaskar D. Rao
University of California, San Diego

11:00am: "Distributed Sampling and Compression of Scenes with Finite Rate of Innovation in Camera Sensor Networks" 83
Nicolas Gehrig and Pier Luigi Dragotti
Imperial College London

11:20am: "A Practical Approach to Joint Network-Source Coding" 93
Nima Sarshar and Xiaolin Wu
McMaster University

11:40am: "Joint Source-Channel Decoding of Multiple Description Quantized Markov Sequences" 103
Xiaolin Wu, Xiaohan Wang, and Jia Wang[†]
McMaster University, [†]Shanghai Jiao Tong University

Lunch Break: 12:00pm - 2:30pm

TUESDAY MID-DAY

INVITED PRESENTATION

2:30pm - 3:30pm

Recent Advances in Visual Information Processing

Dr. Henrique Malvar

Director, Microsoft Research, Redmond, WA

We present an overview of recent developments in visual information processing at Microsoft Research. We briefly discuss and present short demos of technologies such as multi-camera video rendering, enhancement of images from digital cameras, and high dynamic range imaging. In many cases these lead to interesting compression problems, which can't be solved by just direct application of image and video compression techniques such as JPEG2000 or H.264.

Break: 3:30 - 4:00pm

TUESDAY AFTERNOON

SESSION 3

4:00pm: "Optimal Prefix Codes
for Some Families of Two-Dimensional Geometric Distributions" 113
Frédérique Bassino, Julien Clément[†], Gadiel Seroussi[‡], and Alfredo Viola[*]
Université de Marne-la-Vallée, [†]Université de Caen, [‡]Mathematical Sciences Research Institute, [*]Universidad de la República

4:20pm: "Low Complexity Compression of Short Messages" 123
Stephan Rein, Clemens Gühmann, and Frank H.P. Fitzek
Technical University of Berlin

4:40pm: "Fast Lossless Compression of Scientific Floating-Point Data" 133
Paruj Ratanaworabhan, Jian Ke, and Martin Burtscher
Cornell University

Break: 5:00pm - 5:20pm

SESSION 4

5:20pm: "State Machine Interpretation of Arithmetic Codes
for Joint Source and Channel Coding" 143
Dongsheng Bi, Michael W. Hoffman, and Khalid Sayood
University of Nebraska

5:40pm: "Low Density Codes Achieve the Rate-Distortion Bound" 153
Emin Martinian and Martin Wainwright[†]
Misubishi Electric Research Labs, [†]University of California, Berkeley

6:00pm: "High-Rate Analysis of Source Coding for Symmetric Error Channels" 163
Chandra R. Murthy and Bhaskar D. Rao
University of California, San Diego

WEDNESDAY MORNING

SESSION 5

8:00am: "On the Complexity of Optimal Grammar-Based Compression" 173
Jan Arpe and Rüdiger Reischuk
Universität zu Lübeck

8:20am: "Compressed by the Suffix Tree" 183
Martin Senft
Charles University

8:40am: "Error-Resilient LZW Data Compression" 193
Yonghui Wu, Stefano Lonardi, and Wojciech Szpankowski†
University of California, Riverside, †Purdue University

9:00am: "Data Compression with Restricted Parsings" 203
Peter A. Franaszek, Luis A. Lastras-Montaño, Song Peng†, and John T. Robinson
IBM T.J. Watson Research Center, †Cornell University

9:20am: "Compressed Data Structures: Dictionaries and Data-Aware Measures" 213
Ankur Gupta, Wing-Kai Hon, Rahul Shah, and Jeffrey Scott Vitter
Purdue University

Break: 9:40am - 10:00am

SESSION 6

10:00am: "Quantization with Joint Entropy/Memory Constraints" 223
Robert M. Gray and John T. Gill III
Stanford University

10:20am: "Vector Quantization with Model Selection" 233
Sangho Yoon
Stanford University

10:40am: "Quantization on the Complex Projective Space" 242
Bishwarup Mondal, Satyaki Dutta†, and Robert W. Heath, Jr.
The University of Texas at Austin, †Stony Brook University

11:00am: "Trellis Based Variable Rate Residual Image Coding over Noisy Channels" 252
Tomas Eriksson, Norbert Goertz, Mirek Novak†, and John B. Anderson†
The University of Edinburgh, †Lund University

11:20am: "Quantization of Transmission Parameters in Stereo Linear Predictive Systems" 262
Arijit Biswas and Albertus C. den Brinker†
Technical University Eindhoven, †Philips Research Laboratories

11:40am: "Optimal Index Assignment for Multiple Description Lattice Vector Quantization" 272
Xiang Huang and Xiaolin Wu
McMaster University

Lunch Break: 12:00am - 2:10pm

WEDNESDAY MID-DAY

SESSION 7

2:10pm: "Efficient Rate Control for JPEG2000 Coder and Decoder" 282
Francesc Aulí-Llinàs, Joan Serra-Sagristà, Jose Lino Monteagudo-Pereira, and Joan Bartrina-Rapesta
Universitat Autònoma Barcelona

2:30pm: "A Fast and Low Complexity Image Codec Based on Backward Coding of Wavelet Trees" 292
Jiangling Guo, Sunanda Mitra, Brian Nutter, and Tanja Karp
Texas Tech University

2:50pm: "Making the Correct Mistakes" 302
Dharmendra S. Modha and Narayana P. Santhanam[†]
IBM Research, [†]University of California, San Diego

3:10pm: "Distortion Control for Queues with Deadlines" 312
Azadeh Faridi and Anthony Ephremides
University of Maryland

Break: 3:30pm - 4:00pm

WEDNESDAY AFTERNOON
POSTER SESSION AND RECEPTION

4:00-7:00pm

In the Golden Cliff Room

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

THURSDAY MORNING

SESSION 8

8:00am: "Gauss Mixture Model-Based Classification for Sensor Networks" 322
Kivanc Ozonat and Robert M. Gray
Stanford University

8:20am: "Compression and Machine Learning:
A New Perspective on Feature Space Vectors" 332
D. Sculley and Carla E. Brodley
Tufts University

8:40am: "Reduced Complexity Content-Based Image Retrieval
Using Vector Quantization" 342
Ajay H. Daptardar and James A. Storer
Brandeis University

Break: 9:00am - 9:20am

SESSION 9

9:20am: "Analysis of Redundant-Wavelet Multihypothesis for Motion Compensation" 352
James E. Fowler
Mississippi State University

9:40am: "Practical Low Delay Broadcast of Compressed Variable Bit Rate Movies" 362
Neva Cherniavsky and Richard E. Ladner
University of Washington

10:00am: "Dual Frame Video Coding with Pulsed Quality and a Lookahead Window" 372
Mayank Tiwari and Pamela Cosman
University of California, San Diego

10:20am: "Perceptually-Weighted Audio Coding
That Scales to Extremely Low Bitrates" 382
Srivatsan Kandadai and Charles D. Creusere
New Mexico State University

Break: 10:40am - 11:00am

SESSION 10

11:00am: "Tradeoffs in XML Database Compression" 392
James Cheney
University of Edinburgh

11:20am: "XML Syntax Conscious Compression" 402
S. Harrusi, A. Averbuch, and A. Yehudai
Tel Aviv University

11:40am: "Lossless Compression of Color Map Images by Context Tree Modeling" 412
Alexander Akimov, Alexander Kolesnikov, and Pasi Fränti
University of Joensuu

12:00pm: "On Compressibility of Protein Sequences" 422
Donald Adjeroh and Fei Nan
West Virginia University

Poster Session

(listed alphabetically by first author)

"On the Use of Words as Source Alphabet Symbols in PPM" 435
Joaquín Adiego and Pablo de la Fuente
Universidad de Valladolid

"Optimal Coding Rate Selection for 3D Video Using RCPC Codes" 436
Donald A. Adjeroh
West Virginia University

"Textual Compression by Collapsible Tries" 437
Alberto Apostolico[†‡] and Yong Wook Choi[*]
[†]Università di Padova, [‡]Georgia Institute of Technology, [*]Purdue University

"Nonlinear Transform Coding: Polar Coordinates Revisited" 438
Demba E. Ba and Vivek K. Goyal
Massachusetts Institute of Technology

"Side Information Aware Coding Strategy in the Quadratic Gaussian CEO Problem" 439
Hamid Behroozi and M. Reza Soleymani
Concordia University

"Distributed Coding via Folding Functions" 440
R. Bernardini and R. Rinaldo
University of Udine

"Still Image Compression through Exhaustive Two-Valued Shape-Adaptive Searches" 441
Maria Bras-Amorós, Jorge González-Conejero, Pere Guitart-Colom, Joan Serra-Sagristà, and Fernando García-Vílchez
Universitat Autònoma de Barcelona

"Compression of Multilingual Aligned Texts" 442
Ehud S. Conley and Shmuel T. Klein
Bar-Ilan University

"Lossless Image Compression by Block Matching on a Mesh of Trees" 443
Sergio De Agostino
University of Rome "La Sapienza"

"Faster Algorithm for Designing Optimal Prefix-Free Codes with Unequal Letter Costs" 444
Sorina Dumitrescu
McMaster University

"High-Rate Training of Gaussian Mixture Vector Quantizers" 445
Ethan R. Duni and Bhaskar D. Rao
University Of California, San Diego

"Noise Immunity for 1:*N* and *M*:1 Nonlinear Mappings for Source-Channel Coding" 446
Pål Anders Floor and Tor A. Ramstad
Norwegian University of Science and Technology

"Dynamic Asymmetric Communication" 447
Travis Gagie
University of Toronto

"A Unified Framework for Lossless Image Set Compression" 448
Barry Gergel, Howard Cheng, and Xiaobo Li[†]
University of Lethbridge, [†]University of Alberta

"Combined Prediction and Residual Coding for Lossless Audio Compression" 449
Florin Ghido
Tampere University of Technology

"Near-Lossless 3D-Image Compression Using Hypergraphs" 450
Luc Gillibert and Alain Bretto
Université de Caen

"On Multi-resolution Coding and a Two-Hop Network" 451
Wei-Hsin Gu and Michelle Effros
California Institute of Technology

"Image Transmission over Flat Fading Channels Using Joint Source Channel Coding" 452
Greg Håkonsen and Tor A. Ramstad
Norwegian University of Science and Technology

"Evaluating the Role of Context in Syntax Directed Compression of XML Documents" 453
S. Hariharan and P. Shankar
Indian Institute of Science

"Efficient Video Broadcast over Wireless Channels Using Adaptive Playback" 454
Mohamed Hassan, Marwan Krunz, and Satyajeet Ahuja
University of Arizona

"Digitising the 2:1 Shannon Mappings for Transport over Heterogeneous Networks" 455
Fredrik Hekland and Tor A. Ramstad
Norwegian University of Science and Technology

"The B-coder: An Improved Binary Arithmetic Coder and Probability Estimator" 456
Benjamin Kelly and David Brailsford
University of Nottingham

"Modeling Delta Encoding of Compressed Files" 457
S.T. Klein, T.C. Serebro, and D. Shapira[†]
Bar Ilan University, [†]Ashkelon Acad. College

"Compression of Small Text Files Using Syllables" 458
Jan Lánsky and Michal Žemlička
Charles University

"Web Graph Compression by Edge Elimination" 459
A. Mahdian, H. Khalili, E. Nourbakhsh, M. Ghodsi
Sharif University of Technology

"Compression of LC/MS Proteomic Data" 460
Agnieszka C. Miguel, John F. Keane†, Jeffrey Whiteaker†, Heidi Zhang†, and Amanda Paulovich†
Seattle University, †Fred Hutchinson Cancer Research Center
"Crypto-compression Prefex Coding" 461
Ruy L. Milidiú and Claudio G. Mello†
PUC-Rio, †Military Institute of Engineering (MIE)
"Burrows-Wheeler Text Compression with Fountain Codes" 462
Bertrand Ndzana Ndzana, Amin Shokrollahi, and Jürgen Abel†
EPFL, †Ingenieurbüro Dr. Abel GmbH
"MST for Lossy Compression Coding of Image Sets" 463
Clinton Nielson and Xiaobo Li
The University of Alberta
"Unifying the Burrows-Wheeler and the Schindler Transforms" 464
Ge Nong and Sen Zhang†
Sun Yat-Sen University, †SUNY College at Oneonta
"Multi-modal, Multi-fractal Boundary Encoding in Object-Based Image Compression" 465
Mark S. Schmalz
University of Florida
"Distortion of Matching Pursuit: Modeling and Optimization" 466
Alireza Shoa and Shahram Shirani
McMaster University
"On-Board Compression Algorithm for Satellite Multispectral Images" 467
Carole Thiebaut, Dimitri Lebedeff†, Christophe Latry, and Yves Bobichon†
CNES, †Alcatel Alenia Space
"Quantized Indexing: Beyond Arithmetic Coding" 468
Ratko V. Tomic
1stWorks Corporation
"A Fast Algorithm for Lossless Compression of Data Tables by Reordering" 469
Slobodan Vucetic
Temple University
"VQ Compression Algorithms on a Shared-Memory Multiprocessor System" 470
Akiyoshi Wakatani
Konan University
"Multiple Description Coding Using Rotated Permutation Codes" 471
Niklas Wernersson and Mikael Skoglund
Royal Institute of Technology
"Error Resilient Transmission of H.264 Video over Wireless Network" 472
Song Xiao, Chengke Wu, Jianchao Du, and Yadong Yang
Xidian University