

Data Compression Conference (DCC'94)

(Sponsored by the IEEE Computer Society TCCC
in Cooperation with NASA/CESDIS)

Snowbird, Utah
March 29 - 31, 1994

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J. Vitter, *Duke U.*
I. Witten, *U. Waikato*
X. Wu, *U. W. Ontario*
J. Ziv, *Technion*

SCHEDULE:

Monday Evening: Wine and Cheese Reception and Registration

Tuesday

Morning: Technical Sessions
Mid-Day: Invited Presentation
Afternoon: Technical Sessions

Wednesday

Morning: Technical Sessions
Mid-Day: Invited Presentation
Afternoon: Poster Session and Reception

Thursday

Morning: Technical Sessions
Mid-Day: Invited Presentation
Afternoon: Technical Sessions

Friday: Industry Workshop

Saturday: NASA Workshop

Advance Program

MONDAY, MARCH 28: Registration / Reception, 7:00 - 10:00pm, In the Golden Cliff Room

TUESDAY, MARCH 29

Welcome: 7:45am

Session 1: 8:00 - 10:05

8:00

"Variable Dimension Weighted Universal Vector Quantization and Noiseless Coding"

M. Effros, P.A. Chou, R.M. Gray

8:25

"Entropy-Constrained Tree-Structured Vector Quantizer Design by the Minimum Cross Entropy Principle"

K. Rose, D. Miller, A. Gersho

8:50

"A Subjective Distortion Measure for Vector Quantization"

X. Wu, K. Zhang

9:15

"Multidimensional Rotations for Quantization"

A. Hung, T. Meng

9:40

"A New Multiple Path Search Technique for Residual Vector Quantizers"

C.F. Barnes

Break: 10:05 - 10:30

Session 2: 10:30 - 12:35

10:30

"The Minimax Redundancy is a Lower Bound for Most Sources"

N. Merhav, M. Feder

10:55

"Differential State Quantization of High Order Gauss Markov Process"

A. Bist

11:20

"Data Compression Techniques for Stock Market Prediction"

S. Azhar, A. Glodjo, M. Kao, J. Reif

11:45

"Huffman-Type Codes for Infinite Source Distributions"

J. Abrahams

12:10

"On the Redundancy of Optimum Fixed-to-Variable Length Codes"

and

"Adaptive Variable-to-Variable Length Codes"

P. Stubbley

Lunch Break: 12:35 - 2:00

Mid-Day Invited Presentation 2:00 - 3:30

"Data Compression Patents"
Wayne Barsky
Partner in the Law Firm of Irell and Manela

Session 3: 4:00 - 5:40

4:00
"Compression-Based Template Matching"
S. Inglis, I. Witten

4:25
"Markov Models for Clusters in Concordance Compression"
A. Bookstein, S. Klein, T. Raita

4:50
"Static Compression for Dynamic Texts"
A. Moffat, N. Sharman, J. Zobel

5:15
"Parsing Algorithms for Dictionary Compression on the PRAM"
D. Hirschberg, L. Stauffer

Break: 5:40 - 6:05

Session 4: 6:05 - 7:20

6:05
"Syntax-Constrained Encoder Optimization
Using Adaptive Quantization Thresholding for JPEG-MPEG Coders"
K. Ramchandran, M. Vetterli

6:30
"Customized JPEG Compression for Grayscale Printing"
R. Vander Kam, P. Wong

6:55
"Lossless Image Compression with Lossy Image
Using Adaptive Prediction and Arithmetic Coding"
S. Takamura, M. Takagi

WEDNESDAY, MARCH 30, 1994

Session 5: 8:00 - 10:05

8:00

"Explicit Bit Minimization for Motion-Compensated Video Coding"

D. Hoang, P. Long, J. Vitter

8:25

"Online Compression of Video Sequences Using Adaptive VQ Codebooks"

X. Wang, S.M. Shende, K. Sayood

8:50

"Compression of HDTV Signals for Low Bit-Rate Transmission

Using Motion Compensated Subband Transform Coding and a Self-Organization Neural Network"

R. Bhaskaran, S.C. Kwatra

9:15

"Differential Vector Quantization of Real-Time Video"

J. Fowler, S. Ahalt

9:40

"The MVP: A Highly-Integrated Video Compression Chip"

R. Gove

Break: 10:05 - 10:30

Session 6: 10:30 - 12:35

10:30

"A Hybrid Approach to Text Compression"

P. Gutmann, T. Bell

10:55

"Highly Efficient Universal Coding with Classifying to Subdictionaries for Text Compression"

Y. Nakano, H. Yahagi, Y. Okada, S. Yoshida

11:20

"Compression By Induction of Hierarchical Grammars"

C. Nevill-Manning, I. Witten, D. Maulsby

11:45

"Architectural Advances in the VLSI Implementation of Arithmetic Coding
for Binary Image Compression"

G. Feygin, P. Gulak, P. Chow

12:10

"Multiplication and Division Free Adaptive Arithmetic Coding Techniques for Bi-Level Images"

L. Huynh

Lunch Break: 12:35 - 2:00

Mid-Day Invited Presentation: 2:00 - 3:30

"Wavelets"

Prof. Bradley Lucier

Purdue University

POSTER SESSION AND RECEPTION: 4:00pm - 7:00pm, In the Golden Cliff Room

(Abstracts of each presentation appear in the conference proceedings.)

THURSDAY, MARCH 31, 1994:

Session 7: 8:00 - 10:05

8:00

"Bayes Risk Weighted Tree-Structured Vector Quantization
with Posterior Estimation"

K. Perlmutter, R.M. Gray, K.L. Oehler, R.A. Olshen

8:25

"Fast Bintree-Structured Image Coder for High Subjective Quality"

X. Wu, Y. Fang

8:50

"A High Performance Fixed Rate Compression Scheme
for Still Image Transmission"

M. Ruf

9:15

"A Nonlinear VQ-Based Predictive Lossless Image Coder"

M. Slyz, D. Neuhoff

9:40

"Band Ordering in Lossless Compression of Multispectral Images"

S. Tate

Break: 10:05 - 10:30

Session 8: 10:30 - 12:35

10:30

"Enhancement of Block Transform Coded Images
Using Residual Spectra Adaptive Postfiltering"

I. Linares, R. Mersereau, M. Smith

10:55

"Self-Similarity of the Multiresolutional Image/Video Decomposition:
Smart Expansion as Compression of Still and Moving Pictures"

O. Kiselyov, P. Fisher

11:20

"An Investigation of Wavelet-Based Image Coding
Using an Entropy-Constrained Quantization Framework"

M. Orchard, K. Ramchandran

11:45

"Filter Evaluation and Selection in Wavelet Image Compression"

J. Villasenor, B. Belzer, J. Liao

12:10

"Visibility of DCT Basis Functions: Effects of Contrast Masking"

J. Solomon, A. Watson, A. Ahumada

and

"Visibility of DCT Basis Functions: Effects of Display Resolution"

A. Watson, J. Solomon, A. Ahumada

Lunch Break: 12:35 - 4:00

Mid-Day Invited Presentation 2:00 - 3:30

"Audio Compression"
Prof. Allen Gersho
University California, Santa Barbara

Session 9: 4:00 - 5:40

4:00
"On Lattice Quantization Noise"
R. Zamir, M. Feder

4:25
"Vector Quantization of Contextual Information
for Lossless Image Compression"
X. Ginesta, S. Kim

4:50
"Bayes Risk Weighted VQ and Learning VQ"
R. Wesel, R.M. Gray

5:15
"Improved Techniques for Single-Pass Adaptive VQ"
C. Constantinescu and J. Storer

Break: 5:40 - 6:05

Session 10: 6:05 - 7:20

6:05
"Variable Dimension Vector Quantization of Speech Spectra
for Low Rate Vocoders"
A. Das, A.V. Rao, A. Gersho

6:30
"A Rapidly Adaptive Lossless Compression Algorithm
for High Fidelity Audio Coding"
T. Shamoan, C. Heegard

6:55
"Sharper Bounds on Occam Filters with Application to Digital Video"
B.K. Natarajan

FRIDAY, APRIL 1: Industry Workshop

SATURDAY, APRIL 2: NASA Workshop