

Data Compression Conference (DCC '93)

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

**Snowbird, Utah
March 30 - April 1, 1993**

General Chair: J. Storer, Brandeis U.

Program Chair: M. Cohn, Brandeis U.

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J. Vitter (Brown U.), G. Wallace (DEC), V. Wei (Bellcore),
I. Witten (U. Waikato), J. Ziv (Technion)

REGISTRATION / RECEPTION

Monday, March 29, 1993
7:00pm - 10:00pm
In the Golden Cliff Room

DCC'93 - Tuesday, March 30, 1993

7:45am: Welcome

Session 1: 8:00 - 10:05

8:00

Combining Image Classification and Image Compression
Using Vector Quantization

K. L. Oehler and R. M. Gray

8:25

An Improved Sequential Search Multistage Vector Quantizer
D. Miller, K. Rose

8:50

Globally Optimal Bit Allocation

X. Wu

9:15

On-Line Adaptive Vector Quantization with Variable Size Codebook Entries
C. Constantinescu, J. A. Storer

9:40

Joint Codebook Design for Summation Product-Code Vector Quantizers
W. Y. Chan, A. Gersho, S. Soong

Break: 10:05 - 10:30

Session 2: 10:30 - 12:35

10:30

Codes with Monotonic Codeword Lengths

J. Abrahams

10:55

Filtering Random Noise via Data Compression

B. K. Natarajan

11:20

Can Random Fluctuation Be Exploited in Data Compression

A. Bookstein, S.T. Klein, T. Raita, I. Rao, M. Patil

11:45

Divergence and the Construction of Variable-to-Variable-Length Lossless Codes
by Source-Word Extensions

G. Freeman

12:10

Universality and Rates of Convergence in Lossy Source Coding

T. Linder, G. Lugose, K. Zeger

Lunch Break, 12:35 - 4:00

Session 3: 4:00 - 5:40

4:00

Design and Analysis of Fast Text Compression Based on
Quasi-Arithmetic Coding

P. Howard, J. Vitter

4:25

An Empirical Evaluation of Coding Techniques for Multi-Symbol Alphabets

A. Moffat, N. Sharman, I. Witten, T. Bell

4:50

Minimizing Error and VLSI Complexity

in the Multiplication-Free Approximation of Arithmetic Coding

G. Feygin, P. Gulak, P. Chow

5:15

Multialphabet Arithmetic Coding at 16 MBytes/sec

H. Printz, P. Stubbley

Break: 5:40 - 6:05

Session 4: 6:05 - 7:20

6:05

Ziv-Lempel Encoding with Multi-Bit Flags

P. Fenwick

6:30

On Approximate String Matching

I. Sadeh

6:55

Coding Theory and Regularization

J. Connor

DCC'93 - Wednesday, March 31, 1993

Session 5: 8:00 - 10:05

8:00

Optimal Piecewise-Linear Compression of Images
V. Bhaskaran, B. K. Natarajan, K. Konstantinides

8:25

Visually Optimal DCT Quantization Matrices for Individual Images
A. Watson

8:50

Optimum DCT Quantization
D. Monro, B. Sherlock

9:15

Full-Frame Compression of Tomographic Images Using the Discrete
Fourier Transform
J. Villasenor

9:40

A High Performance Adaptive Image Compression System
Using a Generative Neural Network: Dynamic Neural Network II
A. Rios, M. Kabuka

Break: 10:05 - 10:30

Session 6: 10:30 - 12:35

10:30

An Embedded Hierarchical Image Coder
using Zerotrees of Wavelet Coefficients
J. Shapiro

10:55

Wavelet Transform-Vector Quantization Compression
of Supercomputer Ocean Model Simulation Output
J. Bradley, C. Brislawn

11:20

Efficient Compression of Wavelet Coefficients
for Smooth and Fractal-like Data
K. Culik II, S. Dube, P. Rajcani

11:45

Fractal Based Image Compression with Affine Transformations
H. Raittinen, K. Kaski

12:10

Generalized Fractal Transforms: Complexity Issues
D. Monro, F. Dudbridge

Lunch Break, 12:35 - 4:00

******* Poster Session and Reception *******

4:00pm - 7:00pm

In the Golden Cliff Room

(An abstract of each poster presentation
appears in the conference proceedings.)

DCC'93 - Thursday, April 1, 1993

Session 7: 8:00 - 10:05

8:00

Segmentation-Based Progressive Image Coding
X. Wu, Y. Fang

8:25

Classified Variable Rate Residual Vector Quantization
Applied to Image Subband Coding
C. Barnes, E. Holder

8:50

Adaptive Channel Optimization of Vector Quantized Data
A. Hung, T. Meng

9:15

Design and Performance of Tree-Structured Vector Quantizers
J. Lin, J. Storer

9:40

A Mean-Removed Variation of Weighted Universal Vector Quantization
for Image Coding

B. Andrews, P. Chou, M. Effros, R. Gray

Break: 10:05 - 10:30

Session 8: 10:30 - 12:35

10:30

Application of AVL Trees to the Adaptive Compression of Numerical Data

H. Yokoo

10:55

Tree Compacting Transformations

G. Promhouse, M. Bauer

11:20

Sort Order Preserving Data Compression for Extended Alphabets

A. Zandi, B. Iyer, G. Langdon

11:45

Compression of DNA Sequences

S. Grumbach, F. Tahi

12:10

Fast and Efficient Lossless Image Compression

P. Howard, J. Vitter

Lunch Break, 12:35 - 4:00

Session 9: 4:00 - 5:40

4:00

Robust, Variable Bit-rate Coding Using Entropy-Based Codebooks

J. Fowler, S. Ahalt

4:25

Low Bit Rate Coding of Earth Science Images

F. Kossentini, W. Chung, M. Smith

4:50

Algorithms for Fast Vector Quantization

S. Arya, D. Mount

5:15
Multispectral Image Compression Algorithms
T. Markas, J. Reif

Break: 5:40 - 6:05

Session 10: 6:05 - 7:20

6:05
Real-time Focal-Plane Image Compression
R. Tawel

6:30
A Low Power Analog CMOS Vector Quantizer
G. Tuttle, S. Fallahi, A. Abidi

6:55
An MPEG Encoder Implementation on the Princeton Engine Video Supercomputer
H. Taylor, D. Chin, A. Jessup

POSTER SESSION

(one page abstracts of each appear in the proceedings)

NASA Workshop

Friday, April 2