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PROGRAM

Data Compression Conference (DCC 2007)

Sponsored by Brandeis University.
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Snowbird, Utah
March 27-29, 2007

COMMITTEE:

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Dafna Sheinwald, *IBM Haifa Labs*
Kenneth Zeger, *University of California at San Diego*

SCHEDULE OVERVIEW:

Monday Evening, March 26:
Registration and Reception

Tuesday, March 27:
Morning: Technical Sessions 1, 2, 3
Mid-Day: Invited Presentation
Afternoon: Technical Session 4

Wednesday, March 28:
Morning: Technical Sessions 5, 6
Mid-Day: Technical Session 7
Afternoon: Poster Session and Reception

Thursday, March 29:
Morning: Technical Sessions 8, 9, 10

** Special thanks to Henrique Malvar and Microsoft for production of the DCC 2007 CD.*

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

TUESDAY MORNING

SESSION 1

8:00am: A Stochastic Model for Video and Its Information Rates 3
Arthur L. da Cunha, Minh Do, and Martin Vetterli†
University of Illinois Urbana-Champaign, †LCAV-EPF Lausanne

8:20am: Half-Pel Accurate Motion-Compensated Orthogonal Video Transforms 13
Markus Flierl and Bernd Girod
Stanford University

8:40am: Spatial Sparsity Induced Temporal Prediction for Hybrid Video Compression 23
Gang Hua and Onur G. Guleryuz†
Rice University, †DoCoMo USA Laboratories, Inc.

Break: 9:00am - 9:20am

SESSION 2

9:20am: Normalized Maximum Likelihood Model of Order-1 for the Compression of DNA Sequences 33
Gergely Korodi and Ioan Tabus
Tampere University of Technology

9:40am: A Simple Statistical Algorithm for Biological Sequence Compression 43
Minh Duc Cao, Trevor I. Dix, Lloyd Allison, and Chris Mears
Monash University

10:00am: Structure Induction by Lossless Graph Compression 53
Leonid Peshkin
Harvard University

Break: 10:20am - 10:40am

SESSION 3

10:40am: Multiple-Description Coding by Dithered Delta-Sigma Quantization 63
Jan Østergaard and Ram Zamir†
Delft University of Technology, †Tel Aviv University

11:00am: Multiple Description Coding for Stationary and Ergodic Sources 73
Jun Chen, Chao Tian†, and Suhas Diggavi†
IBM T. J. Watson Research Center, †Swiss Federal Institute of Technology

11:20am: Lossless Transmission of Correlated Sources over a Multiple Access Channel with Side Information 83
Deniz Gündüz and Elza Erkip
Polytechnic University, Brooklyn, NY

11:40am: Distributed Functional Compression through Graph Coloring 93
Vishal Doshi, Devavrat Shah, Muriel Médard, and Sidharth Jaggi
Massachusetts Institute of Technology

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

TUESDAY MID-DAY

INVITED PRESENTATION

2:30pm - 3:30pm

Digital Cinema Compression Standards

Dr. Michael W. Marcellin
Professor, Dept. of Electrical and Computer Engineering
University of Arizona

Abstract: A consortium of Hollywood studios, known as Digital Cinema Initiatives (DCI), has selected JPEG2000 for future distribution of motion pictures. This selection was based in part on the fact that JPEG2000 is an open international standard that can support both 2K and 4K resolution projectors from a single codestream. The talk will give an overview of digital cinema, including discussions on image quality, color space selection, security, business issues, and JPEG2000 profiles.

Break: 3:30 - 4:30pm

TUESDAY AFTERNOON

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4:30pm: Differential Compression of Executable Code 103
Giovanni Motta, James Gustafson, and Samson Chen
Bitfone Corporation

4:50pm: Compressed Delta Encoding for LZSS Encoded Files..... 113
Shmuel T. Klein and Dana Shapira[†]
Bar Ilan University, [†]Ashkelon Academic College

5:10pm: Simple Linear-Time Off-Line Text Compression
by Longest-First Substitution 123
Ryosuke Nakamura, Hideo Bannai, Shunsuke Inenaga,
and Masayuki Takeda
Kyushu University

5:30pm: Bounds on Redundancy in Constrained Delay Arithmetic Coding 133
Ofer Shayevitz, Eado Meron, Meir Feder, and Ram Zamir
Tel Aviv University

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David Varodayan, Aditya Mavlankar, Markus Flierl, and Bernd Girod
Stanford University

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Sushil K. Jain and Donald A. Adjeroh
West Virginia University

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Lorenzo Ibarria, Peter Lindstrom†, and Jarek Rossignac
Georgia Institute of Technology, †Lawrence Livermore National Laboratory

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University of California, Berkeley, †Mitsubishi Electric Research Laboratories

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Luigi Cinque and Sergio De Agostino
La Sapienza University

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Xiangjun Zhang, Xiaolin Wu, and Feng Wu†
McMaster University, †Microsoft Research Asia

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Rahul Raguram, Michael W. Marcellin, and Ali Bilgin
University of Arizona

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Linning Ye, Jiangling Guo†, Brian Nutter, and Sunanda Mitra
Texas Tech University, †Beijing Institute of Technology at Zhuhai

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S. Chen and A. Nucci†
Rutgers University, †Narus, Inc.

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Ying Liu and William A. Pearlman
Rensselaer Polytechnic Institute

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Massachusetts Institute of Technology
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Shanghai Jiao Tong University, †McMaster University
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Stanford University

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Long Island University

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Milena Milenkovic, Aleksandar Milenkovic[†], and Martin Burtscher[‡]
IBM, Austin, Texas, [†]University of Alabama in Huntsville, [‡]Cornell University

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Cornell University

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