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PROGRAM

Data Compression Conference (DCC 2010)

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Snowbird, Utah
March 24-26, 2010

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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

Break: 10:00am - 10:20am

SESSION 2

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

Break: 5:20 - 5:40pm

SESSION 4

THURSDAY MORNING

SESSION 5

Break: 10:00am - 10:20am

SESSION 6

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[†]
Texas A&M University, [†]New Mexico State University

2:00pm: Lossless Compression Based on the Sequence Memoizer 337
Jan Gasthaus, Frank Wood[†]*, and Yee Whye Teh*
UCL, [†]Columbia University

2:20pm: A Similarity Measure Using Smallest Context-Free Grammars 346
Daniele Cerra[†] *and Mihai Datcu*[†,‡]
[†]German Aerospace Center (DLR), [‡]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[†]*, and John Wright*[†]
Stanford University, [†]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

Break: 9:40am - 10:00am

SESSION 10

Break: 11:40am - 12:00noon

SESSION 11

Poster Session

(listed alphabetically by first author)