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PROGRAM

Data Compression Conference (DCC 2018)

Sponsored by U. Arizona, Brandeis U., Microsoft Research, IEEE Signal Processing Society
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Snowbird, Utah, March 27 - March 30, 2018

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SCHEDULE OVERVIEW:

Tuesday Evening, March 27:
Registration and Reception (7pm - 10pm)

Wednesday, March 28:

Morning:	Technical Sessions 1,2,3	(8:00am - 11:40am)
Mid-Day:	Keynote Speaker	(2:00pm - 3:30pm)
Afternoon:	Technical Sessions 4,5	(4:00pm - 6:40pm)

Thursday, March 29:

Morning:	Technical Sessions 6,7,8	(8:00am - 11:40am)
Mid-Day:	Technical Session 9	(2:00pm - 3:20pm)
Afternoon:	Poster Session and Reception	(4:00pm - 7:00pm)

Friday, March 30:

Morning:	Technical Sessions 10,11,12	(8:00am - 12:20pm)

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

WEDNESDAY MORNING

SESSION 1, *The Emerging AV1 Video Codec, Part 1*

Break: 9:00am - 9:20am

SESSION 2, *Computation Over Compressed Data, Part 1*

Break: 10:20am - 10:40am

SESSION 3

Wednesday Lunch Break: 11:40pm - 2:00pm

WEDNESDAY MID-DAY

Keynote Speaker

2:00pm - 3:30pm

Inpainting-Based Compression of Visual Data

Joachim Weickert

Professor, Saarland University, Saarbruecken, Germany

Inpainting-based codecs for lossy image compression store only a small, carefully optimized subset of the pixels. In the decoding step, the discarded information is filled in with a suitable inpainting mechanism. This can be achieved with partial differential equations (PDE-based inpainting) or by copying information from patches in other image regions (exemplar-based inpainting).

A successful realization of inpainting-based codecs may offer interesting advantages over transform-based codecs: The stored pixel information is more intuitive, and it is closer to the mechanisms of human perception, if these pixels correspond to semantically relevant features.

However, to turn this temptingly simple idea into viable codecs with favorable performance, several difficult and interrelated questions must be answered first, in particular:

- What are the most useful inpainting processes?
- Which data should be kept?
- How can the selected data be encoded efficiently?
- How fast are the numerical algorithms?

This talk gives an overview of the main achievements in this emerging field, sketches practically relevant adaptations, and discusses open challenges.

WEDNESDAY AFTERNOON

SESSION 4

Break: 5:20pm - 5:40pm

SESSION 5

THURSDAY MORNING

SESSION 6

Break: 9:00am - 9:20am

SESSION 7

Break: 10:20am - 10:40am

SESSION 8, *Computation Over Compressed Data, Part 2*

Thursday Lunch Break: 11:40pm - 2:00pm

THURSDAY MID-DAY

SESSION 9

2:00pm: Generalized Probability Smoothing 249
Christopher Mattern
DeepMind

2:20pm: Fixed-Rate Zero-Delay Source Coding for Stationary Vector-Valued Gauss-Markov Sources 259
Photios A. Stavrou[1] and Jan Østergaard[2]
[1]KTH Royal Institute of Technology, [2]Aalborg University

2:40pm: Universal Compression of Piecewise i.i.d. Sources 269
Badri Vellambi, Owen Cameron, and Marcus Hutter
Australian National University

3:00pm: Gaussian Hierarchical Identification with Pre-processing 279
Minh Thanh Vu, Tobias J. Oechtering, and Mikael Skoglund
KTH Royal Institute of Technology

POSTER SESSION AND RECEPTION

4:00pm - 7:00pm
In the Golden Cliff Room

A full listing of participants is at the end this program.

For this year, the poster session will include a group to address the theme of a *next-generation international video coding standard*:

Unequal Weight Planar Prediction and Weighted Angular Prediction
Krit Panusopone

Simplified Depth Intra Coding Based on Texture Feature and Spatial Correlation in 3D-HEVC
Li Song

Hybrid Cubemap Projection Format for 360-degree Video Coding
Fanyi Duanmu, Yuwen He, Xiaoyu Xiu, Philippe Hanhart

Locally Refined Motion Compensation for Future Video Coding
Zhao Wang, Shiqi Wang, Xinfeng Zhang, Shanshe Wang, Siwei Ma

Low-Complexity Spatial Scalability Scheme using HEVC for 4K and VR Videos
Glenn Herrou, Wassim Hamidouche, Luce Morin

The Multi-Scale Deep Decoder for the Standard HEVC Bitstreams
Tingting Wang, Xiao Wenhui, Mingjin Chen

Descriptions of these works and information on author affiliations appear in the posters session portion of the DCC 2018 proceedings, and in the case of the sixth work, in the technical sessions portion of the proceedings.

FRIDAY MORNING

SESSION 10, *Computation Over Compressed Data, Part 3*

Break: 9:20am - 9:40am

SESSION 11

Break: 10:40am - 11:00am

SESSION 12, *The Emerging AV1 Video Codec, Part 2*

Poster Session

(listed alphabetically by first author)