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PROGRAM

Data Compression Conference (DCC 2023)

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Snowbird, Utah, March 21 - March 24, 2023

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Yan Ye, *Alibaba Group*
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SCHEDULE OVERVIEW (*all times U.S. Mountain Daylight Time*):

Tuesday Evening, March 21: Registration and Reception (7pm - 9pm)

Wednesday, March 22:

Morning:	Technical Sessions 1,2,3	(8:20am - noon)
Mid-Day:	Keynote Speaker	(2:30pm - 3:30pm)
Afternoon:	Technical Sessions 4,5	(4:00pm - 6:20pm)

Thursday, March 23:

Morning:	Technical Sessions 6,7,8	(8:20am - noon)
Mid-Day:	Keynote Speaker	(2:30pm - 3:30pm)
Afternoon:	Poster Session and Reception	(4:00pm - 6:00pm)

Friday, March 24:

Morning:	Technical Sessions 9,10,11	(8:20am - noon)

TUESDAY EVENING - Registration / Reception, 7-9pm (Golden Cliff Room)

WEDNESDAY MORNING

SESSION 1 Video Coding and Quality Assessment

8:20am: Video Transformer Based Video Quality Assessment with Spatiotemporally Adaptive Token Selection and Assembly 3

Shiling Zhao[1], Haibing Yin[1,2], Hongkui Wang[1,2], and Yang Zhou[1]

[1]Hangzhou Dianzi University, China, [2]Lishui Research Institute of Hangzhou Dianzi University, China

8:40am: Gradient Linear Model for Chroma Intra Prediction 13

Che-Wei Kuo[1], Xinwei Li[2], Xiaoyu Xiu[1], Hong-Jheng Jhu[1], Ning Yan[1], Xianglin Wang[1], Yan Ye[2], Jie Chen[2], and Ru-Ling Liao[2]

[1]Kwai Inc., USA, [2]Alibaba Group, China

9:00am: Decoder-Side Chroma Intra Mode Derivation in Video Coding 22

Xinwei Li, Ru-Ling Liao, Jie Chen, and Yan Ye

Alibaba Group, China

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Ru-Ling Liao, Yan Ye, Jie Chen, and Xinwei Li

Alibaba Group, China

Break: 9:40am - 10:00am

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Ezgi Özyilkan[1,3], Mateen Ulhaq[2,3], Hyomin Choi[3], and Fabien Racapé[3]

[1]New York University; [2]Simon Fraser University, [3]InterDigital - Emerging Technologies Lab, USA

10:20am: Model Compression for Data Compression: Neural Network Based Lossless Compressor Made Practical 52

Liang Qin and Jie Sun

Huawei Technology Co., Ltd., Hong Kong

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Marco Oliva[1], Travis Gagie[2], and Christina Boucher[1]

[1]University of Florida, USA, [2]Dalhousie University, Canada

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Davide Cenzato[1], Veronica Guerrini[2], Zsuzsanna Lipták[1], and Giovanna Rosone[2]

[1]University of Verona, Italy, [2]University of Pisa, Italy

11:40am: Bit-Parallel (Compressed) Wavelet Tree Construction 81

Patrick Dinklage[1], Johannes Fischer[1], Florian Kurpicz[2], and Jan-Philipp Tarnowski[1]

[1]TU Dortmund University, Germany, [2]Karlsruhe Institute of Technology, Germany

Wednesday Lunch Break: noon - 2:30pm

WEDNESDAY MID-DAY

Keynote Speaker

2:30pm - 3:30pm

Perception: The Next Milestone in Learned Image Compression

Johannes Ballé
Google

Since its emergence roughly 5 years ago, the field of learned data compression has attracted considerable attention. Using machine learning in source coding promises faster innovation cycles, as well as better adaptation to novel data modalities and nonlinear distortion metrics. For example, image codecs can now be end-to-end optimized to perform best for specific types of images, by simply replacing the training set. They may be designed to minimize a given perceptual metric, or in fact any differentiable perceptual loss function, without the need to evaluate it during encoding. However, as has been demonstrated, many existing perceptual models are not useful for end-to-end training. They do not generalize well enough, no matter how well they may predict human judgements on image quality datasets. In this talk, I will first give an overview of the current state of learned image compression, and then focus on what I consider the next big milestone: finding new and better ways to model visual perception.

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Kejun Wu[1], Yi Wang[1], Wenyang Liu[1], Kim-Hui Yap[1], and Lap-Pui Chau[2]

[1]Nanyang Technological University, Singapore, [2]The Hong Kong Polytechnic University, Hong Kong

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Peking University, China

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[1]Peking University, China, [2]Hangzhou Dianzi University, China

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Mégane Gammoudi[1,2], Christian Scheunert[1], Giang T. Nguyen[1], and Frank Fitze[1]

[1]Technische Universität Dresden, Germany, [2]John Deere GmbH & Co. KG, Germany

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Na Wang[1], Zhengrui Li[2], and Sian-Jheng Lin[3]

[1]University of Shanghai for Science and Technology, China, [2]Hong Kong University of Science and Technology, China, [3]Huawei Technology Co. Ltd, China

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Jan Østergaard[1], Christian Pedersen[1], Mo Zhou[1], Niels de Koeijer[2], and Martin Møller[2]

[1]Aalborg University, Denmark, [2]Bang & Olufsen, Denmark

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[1]University of Pisa, Italy, [2]Gran Sasso Science Institute, Italy, [3]Dalhousie University, Canada, [4]Ca' Foscari University, Italy, [5]University of Palermo, Italy

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Alan Cleary[1] and Jordan Dood[2]

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[1]Nanjing University, China, [2]Hangzhou Normal University, China

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Keynote Speaker

2:30pm - 3:30pm

Pangenomic FM-indexes

Prof. Travis Gagie
Dalhousie University

DNA alignment has been a killer app for the FM-index, but aligning DNA reads against a single genome can bias research results and medical diagnoses. In the past few years we have found ways to FM-index datasets of thousands of genomes, but researchers want the results expressed in terms of compact representations called pangenome graphs. Hundreds of matches in the dataset may correspond to only one or two matches in the graph. Given a read, therefore, we would like to find which parts of it match well and where they match in the graph, in time depending on the length of the read and the number of matches in the graph but not on the number of matches in the dataset. We are now closing in on that goal; this talk will give a high-level view of the challenges and some potential solutions.

THURSDAY AFTERNOON

POSTER SESSION AND RECEPTION

4:00pm – 6:00pm
In the Golden Cliff Room

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

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[1]Dolby Laboratories, Inc., USA, [2]Ittiam Systems Pvt. Ltd., India

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