

PROGRAM

Data Compression Conference (DCC 2020)

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Snowbird, Utah, March 24 - March 27, 2020

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****** DCC 2020 will be a virtual conference.***

Due to the widespread 2020 travel restrictions, DCC 2020 has been converted to a virtual conference, taking the form a library of videos and posters that can be accessed easily.

What follows is the original scheduled conference program.

(Listed times and functions are no longer relevant, but the technical program remains.)

Further information and links for the virtual conference will be posted on an updated version of this program, hopefully within a few weeks following the scheduled conference dates.

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

WEDNESDAY MORNING

SESSION 1

- 9:00am:** DRASIC: Distributed Recurrent Autoencoder for Scalable Image Compression 3
Enmao Diao¹, Jie Ding², and Vahid Tarokh¹
¹Duke University, ² University of Minnesota-Twin Cities
- 9:20am:** Deep Learning-Based Image Compression with Trellis Coded Quantization..... 13
Binglin Li¹, Mohammad Akbari¹, Jie Liang¹, and Yang Wang²
¹Simon Fraser University, ²University of Manitoba
- 9:40am:** The Sibling Neural Estimator: Improving Iterative Image Decoding
with Gradient Communication..... 23
Ankur Mali¹, Alexander G. Ororbia², and C. Lee Giles¹
¹The Pennsylvania State University, ²Rochester Institute of Technology
- 10:00am:** Noise-to-Compression Variational Autoencoder for Efficient End-to-End Optimized Image
Coding 33
*Jixiang Luo¹, Shaohui Li¹, Wenrui Dai^{1,2}, Yuhui Xu¹, De Cheng², Gang Li²,
and Hongkai Xiong¹*
¹Shanghai Jiao Tong University, ²Huawei Cloud

Break: 10:20am - 10:40am

SESSION 2

- 10:40am:** EPIC: Context Adaptive Lossless Light Field Compression using Epipolar
Plane Images 43
Muhammad Umair Mukati and Søren Forchhammer
DTU Fotonik\ Technical University of Denmark
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Hans Garcia, Miguel Marquez, and Henry Arguello
Universidad Industrial de Santander
- 11:20am:** Gaussian Guided Inter Prediction for Focal Stack Images Compression 63
Kejun Wu^{1,2}, Qiong Liu^{1,2}, Yaguang Yin³, and You Yang^{1,2}
¹Huazhong University of Science and Technology, ²Wuhan National Laboratory
for Optoelectronics, ³Academy of Broadcasting Science, China
- 11:40am:** Implicit Geometry Partition for Point Cloud Compression 73
Xiang Zhang, Wen Gao, and Shan Liu
Tencent

Wednesday Lunch Break: noon - 2:30pm

WEDNESDAY MID-DAY

Keynote Speaker

2:30pm - 3:30pm

Quality is in the Eye of the Beholder

Alan C. Bovik, Director
Laboratory for Image and Video Engineering (LIVE)
The University of Texas at Austin

In this talk I will discuss recent experiments targeting a deeper understanding of the relationships between global and local visual perception of picture quality and compression. Specifically, I will discuss novel deep network architectures for picture quality analysis and novel loss functions for picture compression, leading to interesting potential advances in practice.

Al Bovik is the Cockrell Family Regents Endowed Chair Professor at The University of Texas at Austin. He has received many major international awards, including the 2019 Progress Medal of the Royal Photographic Society, the 2019 IEEE Fourier Award, the 2017 Edwin H. Land Medal from the Optical Society of America, the 2015 Primetime Emmy Award for Outstanding Achievement in Engineering Development from the Academy of Television Arts and Sciences, and the Norbert Wiener and ‘Sustained Impact’ Awards of the IEEE Signal Processing Society. He is a Fellow of the IEEE, the Optical Society of America, and SPIE. His books include *The Handbook of Image and Video Processing*, *Modern Image Quality Assessment*, and *The Essential Guides to Image and Video Processing*. Al co-founded and was the longest-serving Editor-in-Chief of the *IEEE Transactions on Image Processing* and created the IEEE International Conference on Image Processing in Austin, Texas, in November, 1994.

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*Tung Nguyen, Benjamin Bross, Heiko Schwarz, Detlev Marpe,
and Thomas Wiegand*

Fraunhofer HHI

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*Han Gao¹, Ru-Ling Liao², Kevin Reuzé³, Semih Esenlik¹, Elena Alshina¹,
Yan Ye², Jie Chen², Jiancong Luo², Chun-Chi Chen³, Han Huang³,
Wei-Jung Chien³, Vadim Seregin³, and Marta Karczewicz³*

¹Huawei Technologies, ²Alibaba Group, ³Qualcomm Inc

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Jing Cui¹, Tao Zhang², Chenchen Gu², Xinfeng Zhang³, and Siwei Ma¹

¹Peking University, ²Tencent, ³UCAS

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*Nieves R. Brisaboa¹, Antonio Fariña¹, Gonzalo Navarro²,
and Tirso Varela Rodeiro¹*

¹Universidade da Coruña, ²University of Chile

5:40pm: Revisiting Compact RDF Stores Based on k2-Trees..... 123

*Nieves R. Brisaboa, Ana Cerdeira-Pena, Guillermo De Bernardo,
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Universidade da Coruña

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Adrián Gómez-Brandón

Universidade da Coruña

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*Philip Bille¹, Mikko Berggren Ettienne¹, Travis Gagie², Inge Li Gørtz¹,
and Nicola Prezza³*

¹Technical University of Denmark, ²Dalhousie University,

³LUISS University of Rome

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*Luis M. S. Russo¹, Ana Sofia D. Correia¹, Gonzalo Navarro²,
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¹Instituto Superior Técnico Universidade de Lisboa, ²University of Chile

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Fraunhofer Heinrich-Hertz-Institute (HHI)

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Taras Shevchenko National University of Kyiv

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Changyue Ma¹, Dong Liu¹, Li Li², Yao Wang³, and Feng Wu¹

¹University of Science and Technology of China, ²University of Missouri-Kansas City,

³New York University

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*Taoran Lu¹, Fangjun Pu¹, Peng Yin¹, Sean McCarthy¹, Walt Husak¹, Tao Chen¹,
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Yan Ye³, and Jiancong Luo³*

¹Dolby Laboratories Inc., ²InterDigital, ³Alibaba Group

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*Junru Li¹, Meng Wang², Li Zhang³, Kai Zhang³, Shiqi Wang², Shanshe Wang¹,
Siwei Ma¹, and Wen Gao¹*

¹Peking University, ²City University of Hong Kong, ³Bytedance Inc.

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¹Kyushu University, ²Japan Society for Promotion of Science, ³RIKEN, Japan

POSTER SESSION AND RECEPTION

4:00pm - 7:00pm

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¹ Universidad Industrial de Santander, ² Universidad Rey Juan Carlos	
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¹ City University of Hong Kong, ² Peking University, ³ Bytedance Inc., USA, ⁴ Bytedance (HK) Limited, Hong Kong	

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¹ University of Crete, ² Institute of Computer Science, FORTH	
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