

Dr. Zhu Li

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University of Missouri – Kansas City
Director, NSF I/UCRC Center for Big Learning at UMKC
Associate Editor-in-Chief, *IEEE Trans on Circuits & System for Video Technology*, 2020-23
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Education:

- Doctor of Philosophy in Electrical & Computer Engineering (2004), **Northwestern University**, Evanston, Illinois 60208, USA
- Master of Science in Computer Science (1997), **University of Louisiana, Lafayette**, Louisiana 70504, USA
- Bachelor of Science in Computer Science (1992), **Sichuan University**, Chengdu, China

Appointments:

- *Professor* (2022), *Associate Professor with Tenure* (2019), *Associate Professor* (2015), **University of Missouri, Kansas City**, 2015-to date
- *AFRL Summer Faculty*, UAV Research Center, **US Air Force Academy**, 2016-18, 2020, 2022-24
- *Summer Faculty* (1/2 time), **Air Force Research Lab**, Sensor Directorate, Dayton Ohio, 2021.
- *Senior Staff Researcher/Sr. Manager*, Multimedia Standards Lab, **Samsung Research America**, Richardson, TX, USA, 2012-2015
- *Senior Staff Researcher*, Media Lab, **FutureWei Technology**, Bridgewater, NJ, USA, 2010-2012
- *Assistant Professor*, Dept of Computing, **The Hong Kong Polytechnic University**, 2008-2010
- *Principal Staff Research Engineer*, Multimedia Research Lab, **Motorola Labs**, Schaumburg, IL, USA, 2000-2008

Research Interests

- *Remote Sensing, Imaging & Vision*: AI enabled Image Processing and machine learning for remote sensing and computer vision problems, hyper-spectral imaging, Synthetic Aperture Radar (SAR) imaging and processing, lensless cameras, event camera based vision, mmWave radar for action recognition, point cloud/LiDAR sensing and vision problems.
- *Signal & Data Compression*: Compression of image and videos, 3D volumetric data coding, light field, point cloud compression, 360 immersive video compression and communication systems; End-to-end deep learning based compression for point cloud and complex synthetic aperture radar images; compression for machine vision; Lossless compression of DNA sequence.
- *Embedded Machine Learning*: Machine learning for image recovery from noisy and blurred measurement, deblocking, deblurring, cross modality image translation, low light and low resolution vision problems. Machine learning system optimization and security, model compression, gradient compression for federated learning, security in deep learning framework. Edge and mobile inference engine optimization, large model compression and acceleration.

Teaching

- **ECE/CS 484 Digital Image Processing:** fundamental of signal/image processing, image formation process, filters, Fourier transforms, 2D Fourier transforms, DCT, graph signal processing, bilateral filters, neural networks in image processing, auto-encoder, variational auto-encoder.
- **ECE/CS 5578 Multimedia Communication:** fundamental of image/video coding and communication systems, covering info theory on entropy, entropy coding, transform and prediction based image/video coding, rate-distortion optimization, learning based compression, deep learning for prediction and deblocking, MPEG system, MP4 file format, DASH for video streaming, source-channel coding. Course web page: <http://sites.google.com/view/ece5578>
- **ECE/CS 5582 Computer Vision:** fundamental of image processing and computer vision, covering image formation geometry constraints, homography estimation, color space and demosaicing, filters and gradients, Harris detector and SIFT, subspace methods including Fisherface and Laplacianface, subspace optimization on Grassmann manifold, deep conv neural networks in vision, transfer learning. Course web page: <http://sites.google.com/view/ece5582>

PhD and Post-Doc Supervising

Currently team: 8 PhD and 1 Post-Doc

- 1 of my PhD Students Received the UMKC School of Graduate Studies (SGS) Research Grant Award.
- 1 of my MS student nominated for UMKC outstanding MS thesis award 2017
- my PhD students received internships from leading tech companies: Qualcomm, HERE, Tencent Media Lab, INTEL, PolyCom, Dolby Lab, SONY, FutureWei Media Lab, Thales.
- 2 of my MS students got intern at AFRL Dayton Lab

Supervised Post-Docs:

- Dr. Li Li, 2016.10-2020.09, now Full Professor with Univ of Science & Tech of China (USTC). ICME 2023 Multimedia Rising Star.
- Dr. Renlong Hang, 2018.09-2019.12, now Associate Professor with Nanjing Univ of Info Science & Tech (NUIST). Top 2% researcher in citation in remote sensing area.

Graduated PhD student:

- Dr. Biren Kathariya, 2024, initial job: Senior Research Engineer, Dolby Lab.
- Dr. Rijun Liao, 2024, initial job: Asst Prof, Guangdong Medical University.
- Dr. Yangfan Sun, 2023, initial job: Amazon Research, Shenzhen.
- Dr. Anique Akhtar, 2022, initial job: Qualcomm Video Codec researcher.
- Dr. Zhaobin Zhang, 2019 (initial employment: Researcher at ByteDance, San Diego)
- Dr. Dewan F. Noor, 2019 (initial employment: Asst Prof, Tuskegee University)
- Dr. Wei Jia, 2021, (initial employment: Researcher at Kwai's Video Codec Group, San Diego)

Supervised visiting PhD Students:

- Yue Li, USTC, 2017-18, now with ByteDance, San Diego
- Wenjie Zhu, Shanghai Jiaotong Univ, 2017~18, now with Tencent Shanghai Lab
- Han Zhang, Shanghai Jiaotong Univ, 2018~19, now with Tencent Shanghai Lab
- Yixin Mei, Xian Jiaotong Univ, 2019-20, now with Huawei Tech, China.

Professional and Synergistic Activities

Associate Editor-in-Chief (2020~2023): IEEE Transactions on Circuits & System for Video Technology (T-CSVT)

Senior Area Editor (2024~): IEEE Transactions on Circuits & System for Video Technology (T-CSVT)

Associate Editor (2019-): IEEE Trans on Image Processing (T-IP)

Associate Editor (2015 - 2018): IEEE Transactions on Multimedia (T-MM)

Associate Editor (2016 - 2019, 2024~): IEEE Transactions on Circuits & System for Video Technology (T-CSVT)

Associate Editor (2020-): Frontier in Signal Processing - Image Communication.

Associate Editor (2015 - 2018): Journal of Signal Processing Systems (JSPS), Springer Publication

Guest Editor:

- IEEE Journal on Selected Areas in Communication (J-SAC), special issue on Economics & Optimization in Networks, 2018.
- IEEE Trans on Circuits & System for Video Tech, special issue on Point Cloud Processing & Compression, 2020.

Elected Technical Committee Member:

- IEEE Multimedia Signal Processing Technical Committee (MMSP-TC): 2015-2019, 2023~
- IEEE Image, Video and Multidimensional Signal Processing (IVMSP) Technical Committee: 2018-current
- IEEE Multimedia Communication Technical Committee (MMTC): Vice Chair Asia (2008-2010), Standards Liaison (2015-2016), Steering Chair (2017-2019).
- IEEE Visual Signal Processing and Communication Technical Committee (VSPC-TC) : 2017-current, Secretary (2022-24), Chair (2024-26).
- IEEE Multimedia System and Applications Technical Committee (MSA-TC): 2016-2019.

Steering Committee:

- IEEE Int'l Conference on Multimedia & Expo (ICME), 2018-2019, representing SPS, 2016-2017 representing ComSoc.
- IEEE Int'l Conference on Visual Communication & Image Processing (VCIP), 2018-2020.

Conference Chair:

- General Co-Chair, IEEE Multimedia Signal Processing Workshop (MMSP), West Lafayette, Indiana, USA, 2024.
- Program Co-Chair, IEEE Multimedia Signal Processing Workshop (MMSP), Poitiers, France, 2023.
- General Co-Chair, IEEE Int'l Conf on Multimedia & Expo (ICME), Brisbane, Australia, 2023.
- Program Chair (Lead): *IEEE Visual Communication & Image Processing (VCIP)*, Suzhou, China, 2022
- Elected TPC Co-Chair, representing IEEE SPS, *IEEE Int'l Conf on Multimedia & Expo (ICME)*, 2019.
- General Chair, *IEEE Visual Communication & Image Processing (VCIP)*, St. Petersburg, FL, USA, 2017.
- TPC Co-Chair, The 7th Annual IEEE Consumer Communications and Networking Conference (CCNC), Las Vegas, USA, 2009.

Symposium Chair:

- IEEE Global Communications Conference: Communications Software, Services and Multimedia Apps Symposium, 2017.
- ITC 28, 2016.
- IEEE International Conf on Communication (ICC) - Multimedia Services, Communication Software and Services Symposium, 2010.

Tutorials:

- Point cloud processing and compression with sparse convolutional engine, given at IEEE Int'l Conf on Image Processing (ICIP), Boredeaux, France, 2022.

Funding Agency Services:

- NSF Panel, 2018, 2021, 2022
- NSF workshop on Future of the networked AR/VR, 2018.
- Invited CAREER Award reviewer, 2018.
- AFOSR YIP Award reviewer, 2018.
- Reviewer for Swiss NSF, 2021
- RGC Panelist for Hong Kong Research Grant Council, 2022, 2023

Best Paper Awards Committees:

- IEEE International Conf on Multimedia & Expo, 2010.

- IEEE Trans on Circuits & System for Video Tech (T-CSVT), 2020, 2021, 2022, 2023.

Area Chair:

- IEEE International Conf on Image Processing (ICIP), 2015, 2016, 2017, 2018, 2019, 2020, 2021.
- IEEE International Conf on Multimedia & Expo (ICME), 2015, 2016, 2017, 2018, 2021.
- IEEE International Conf on Audio, Speech & Signal Processing (ICASSP), 2020, 2021
- IEEE Visual Communication and Image Processing (VCIP) Conf, 2020, 2021
- ACM Multimedia (MM), 2017, 2018.
- ACM Multimedia Systems (MMSys), 2018.
- 28th International Teletraffic Congress (ITC), 2016.

Program Committee Member:

1. IEEE Int'l Symposium on Multimedia (ISM), Irvine, California, 2005, 2006
2. IEEE GLOBECOM, 2006, 2007, 2008, 2010, 2011, 2012, 2013, 2014.
3. IEEE Int'l Conference on Communication (ICC), 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015.
4. PacketVideo Workshop, 2006, 2009, 2010, 2012, 2013.
5. IEEE Int'l Conference on Multimedia and Expo (ICME), 2006, 2007, 2008, 2010, 2013, 2014.
6. IEEE Consumer Communications and Networking Conference (CCNC), 2007, 2008.
7. IEEE Wireless Communication & Networking Conference (WCNC), 2013, 2014.
8. Pacific Conference on Multimedia (PCM), 2007, 2009.
9. IEEE Multimedia Signal Processing (MMSP) workshop, 2006, 2007, 2008, 2011.
10. IEEE Embedded Computer Vision Workshop, in conjunction with ICCV, 2009, 2013.
11. IEEE Workshop on Video-oriented Object and Event Classification, in conjunction with ICCV, 2009, 2010, 2011.
12. 6th IEEE Int'l Conf on Advanced Video and Signal Based Surveillance (AVSS), Genoa, Italy, 2009.

Conference Session Chair: Chaired more than twenty (20) Sessions in Various IEEE and ACM Conferences

Professional Membership: IEEE Senior Member since 2007, nominated for IEEE Fellow by CASS, 2023.

Publications

Book Chapters:

1. L. Li and **Z. Li**, "Light Field and Plenoptic Point Cloud Compression", Springer: *Handbook for Dynamic Data Driven Applications Systems*, Ed. Erik Blasch, 2021.
2. L. Li and **Z. Li**, "Light Field Image Compression", Springer: *Dynamic Data Driven Applications Systems*, Ed. Erik Blasch, 2018.
3. Z. Zheng, **Z. Li**, and A. Nagar, "Compact Deep Neural Networks for Image Understanding on Mobile Devices", Springer: *Mobile and Cloud Visual Media Computing*, Ed. G. Hua, and X. Hua, 2016.
4. H. Zheng, **Z. Li**, Y. Fu, and A. Katsaggelos, "Video Activity Recognition by Luminance Differential Trajectory and Aligned Projection Distance", *Handbook of Statistics*, Ed. V. Govindaraju et. al. Elsevier, 2013.
5. Y. Li, **Z. Li**, J. Huang, and M. Chiang, "Content-Aware Cross-Layer Optimizations in Video Networking", chapter in *Intelligent Multimedia Communication: Techniques and Applications*, Springer-Verlag, Ed. C.-W. Chen, Z. Li, and S. Lian, 2010.
6. **Z. Li**, Y. Fu, J. Yuan, Y. Wu, A. K. Katsaggelos and T. S. Huang, "Multimedia Data Indexing", book chapter in *Semantic Mining Technologies for Multimedia Databases*, Ed. D. Tao, D. Xu, and X. Li, IGI Publishing, 2009.
7. **Z. Li**, A. K. Katsaggelos, and G. M. Schuster, "Rate-Distortion Optimal Video Summarization", book chapter in *Intelligent Multimedia Processing with Soft Computing*, pp. 171-204, editors: Y.P. Tan, K. H. Yap, and L. Wang, Springer-Verlag, Heidelberg, 2004.

Journal Papers: (underlined authors indicate supervised students/post-doc/visiting faculties)

1. L. Hou, T. Fan, Y. Xu and **Z. Li**, "Lossless LiDAR Point Cloud Reflectance Compression with a Deep Hierarchical KNN Context Model," to appear, *IEEE Transactions on Multimedia*, (T-MM), 2025.

2. Y. Jiang, H. Zhang, L. Li, D. Liu and **Z. Li**, "Sparse Point Clouds Assisted Learned Image Compression", to appear, *IEEE Trans. on Circuits & System for Video Tech (T-CSVT: IF 8.4)*, 2025.
3. L. Hou, T. Fan, Y. Xu and **Z. Li**, "Lossless LiDAR Point Cloud Reflectance Compression with a Deep Hierarchical KNN Context Model," in *IEEE Transactions on Multimedia (T-MM)*, 2025.
4. P. Chen, S. Wang, and **Z. Li**, "Occupancy Map Guided Attributes Artifacts Removal for Video-based Point Cloud Compression", *ACM Trans on Multimedia Computing, Communication and Applications (TOMM: IF 5.1)*, 2024.
5. R. Liao, **Z. Li**, S. Battachayya, and G. York, "DensePoseGait: Dense Human Pose Part-Guided for Gait Recognition", to appear, *IEEE Trans. on Biometrics, Behavior, and Identity Science (T-BIOM)*, 2024.
6. C. Henry, L. Song, and **Z. Li**, "Fast Video Deduplication and Localization with Temporal Consistence Re-Ranking", to appear, *IEEE Trans. on Circuits & System for Video Tech (T-CSVT: IF 8.4)*, 2024.
7. W. Wu, H. Chang, Z. Chen, and **Z. Li**, "Plug-and-Play Robust Aerial Object Detection under Hazy Conditions" *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing (J-STARS: IF 5.5)*, 2024.
8. Y. Zhang, D. Ding, Z. Ma, and **Z. Li**, "A Reconfigurable Framework for Neural Network Based Video In-Loop Filtering", *ACM Trans on Multimedia Computing, Comm, & App (TOMM: IF 5.1)*, vol. 20(6), 2024.
9. W. Wu, H. Chang and **Z. Li**, "See SIFT in a Rain," in *IEEE Trans on Circuits and Systems for Video Tech (T-CSVT: IF 8.4)*, vol. 34, no. 5, pp. 3700-3713, May 2024.
10. C. Henry, S. Asif, and **Z. Li**, "Privacy Preserving Face Recognition and Verification with Lensless Camera", to appear, *IEEE Trans on Biometrics, Behaviour, and Identify Science (T-BIOM)*, 2024.
11. L. Gao, **Z. Li**, L. Hou, Y. Xu and J. Sun, "Occupancy-Assisted Attribute Artifact Reduction for Video-Based Point Cloud Compression," in *IEEE Transactions on Broadcasting*, 2024, doi: 10.1109/TBC.2024.3353568
12. A. Akhtar, **Z. Li**, and G. Van der Auwera, "Inter-Frame Compression for Dynamic Point Cloud Geometry Coding", to appear, *IEEE Transactions on Image Processing (T-IP: IF 10.6)*, 2024.
13. L. Gao, Z. Li, L. Hou, Y.-L. Xu, and J. Sun, "Occupancy-Assisted Attribute Artifact Reduction for Video-Based Point Cloud Compression", *IEEE Trans. Broadcast. 70(2): 667-680 (2024)*
14. T. Hassan, **Z. Li**, S. Javed, J. Dias and N. Werghi, "Neural Graph Refinement for Robust Recognition of Nuclei Communities in Histopathological Landscape," in *IEEE Transactions on Image Processing (T-IP: IF 10.6)*, vol. 33, pp. 241-256, 2024, doi: 10.1109/TIP.2023.3337666.
15. B. Kathriya, **Z. Li** and G. van der Auwera, "Joint Pixel and Frequency Feature Learning and Fusion via Channel-wise Transformer for High-Efficiency Learned In-Loop Filter in VVC", accepted, *IEEE Trans. on Circuits & Sys. for Video Tech. (T-CSVT: IF 8.4)*, 2023
16. T. Fan, L. Gao, Y. Xu, D. Wang and **Z. Li**, "Multiscale Latent-Guided Entropy Model for LiDAR Point Cloud Compression," in *IEEE Trans. on Circuits and Sys. for Video Tech (T-CSVT: IF 8.4)*, vol. 33, no. 12, pp. 7857-7869, Dec. 2023, doi: 10.1109/TCSVT.2023.3276788
17. W. Wu, Y. Liu and **Z. Li**, "Subband Differentiated Learning Network for Rain Streak Removal," in *IEEE Transactions on Circuits and Systems for Video Technology, (T-CSVT: IF 8.4)*, 2023.
18. Y. Zhang, G. Ding, D. Ding, Z. Ma and **Z. Li**, "On Content-aware Post-processing: Adapting Statistically Learned Models to Dynamic Content", in *ACM Trans on Multimedia Computing, Communication and Applications (TOMM: IF 5.1)*, 2023.
19. J. Wang, D. Ding, **Z. Li**, X. Feng, C. Cao and Z. Ma, "Sparse Tensor-based Multiscale Representation for Point Cloud Geometry Compression", accepted, *IEEE Trans. on Pattern Analysis & Machine Intelligence (T-PAMI: IF 23.6)*, 2023.
20. R. Liao, **Z. Li**, S. Bhattacharyya, and G. York, "PoseMapGait: A Gait Recognition Method based on Evolution of Pose Estimation Maps and GraphConvolutional Network", accepted, *Neurocomputing (IF 5.77)*, 2022.
21. L. Li, **Z. Li**, S. Liu, and H. Li, "Frame-level Rate Control for Geometry-based LiDAR Point Cloud Compression", accepted, *IEEE Trans. on Multimedia (T-MM: IF 7.3)*, 2022.
22. Y. Sun, L. Li, **Z. Li**, S. Wang, S. Liu and G. Li, "Learning a Compact Spatial-Angular Representation for Light Field", *IEEE Trans. on Multimedia (T-MM: IF 7.3)*, 2022.
23. A. Akhtar, **Z. Li**, L. Li, G. Auwera, and J. Chen, "PU-Dense: Large Scale Photo-Realistic Point Cloud Upsampling", accepted with *IEEE Trans on Image Processing (T-IP: IF 10.6)*, 2022.
24. Y. Sun, **Z. Li**, S. Wang, and W. Gao, "Learning-based Depth-Guided Light Field Factorization for Compressive Light Field Display", *Optical Express*, 2022.
25. **Z. Li**, S. Liu, F. Dufaux, L. Li, G. Li and C. J. Kuo, "Guest Editorial Introduction to the Special Issue on Recent Advances in Point Cloud Processing and Compression," in *IEEE Transactions on Circuits and Systems for Video Technology (T-CSVT: IF 8.4)*, vol. 31, no. 12, 2021, doi: 10.1109/TCSVT.2021.3129071.

26. D. Yang, Y.-X Zou, **Z. Li**, and G. Li, "Learning Human-Object Interaction via Interactive Semantic Reasoning", *IEEE Trans on Image Processing* (T-IP: IF 10.6), doi: 10.1109/TIP.2021.3125258, 2021.
27. **L. Li**, **Z. Li**, S. Liu and H. Li, "Motion Estimation and Coding Structure for Inter-prediction of LiDAR Point Cloud Geometry", accepted, *IEEE Trans on Multimedia* (T-MM: IF 7.3), 2021.
28. **Y. Mei**, **L. Li**, **Z. Li**, and F. Li, "Learning-Based Scalable Image Compression with Latent-Feature Reuse and Prediction", accepted, *IEEE Trans on Multimedia* (T-MM: IF 7.3), 2021.
29. **R. Hang**, Q. Liu, and **Z. Li**, "Spectral Super-Resolution Network Guided by Intrinsic Properties of Hyperspectral Imagery", *IEEE Trans on Image Processing*(T-IP: IF 10.6) doi:10.1109/TIP.2021.3104177, 2021.
30. **W. Jia**, **L. Li**, **Z. Li**, and S. Liu, "Deep Learning Geometry Compression Artifacts Revomal for Video Based Point Cloud Compression", accepted with *Int'l Journal on Computer Vision* (IJCV: IF 13.36), 2021.
31. **A. Akhtar**, **L. Li**, W. Gao, **Z. Li**, **W. Jia** and S. Liu, "Video-based Point Cloud Compression Artifact Removal", accepted, *IEEE Trans on Multimedia* (T-MM: IF 7.3), 2021.
32. X. Sheng, L. Li, D. Liu, Z. Xiong, **Z. Li**, and F. Wu, "Deep-PCAC: An End-to-End Deep Lossy Compression Framework for Point Cloud Attributes", accepted, *IEEE Trans on Multimedia* (T-MM: IF 7.3), 2021.
33. **W. Jia**, **L. Li**, **Z. Li** and S. Liu, "Convolutional Neural Network-based Occupancy Map Accuracy Improvement for Video-based Point Cloud Compression", accepted, *IEEE Trans on Multimedia* (T-MM: IF 7.3), 2021.
34. **R. Liao**, W. An, **Z. Li**, and S. S. Bhattacharyya, "A novel view synthesis approach based on view spacecovering for Gait Recognition", accepted, *Neurocomputing* , 2021.
35. W. Ji, T. Ebrahimi, **Z. Li**, J. Yuan, D. Wu, Y. Xin, "Guest Editorial: Emerging Visual IoT Technologies for Future Communications and Networks", *IEEE Wireless Comm.* , vol. 28(4): 10-11 (2021).
36. **W. Jia**, **L. Li**, **Z. Li**, X. Zhang and S. Liu, "Residual Guided In-Loop Filter for HEVC", accepted, *ACM Trans on Multimedia Computing, Communication and Applications*(TOMM: IF 5.1), 2021.
37. T. Li, K. Zhang, S. Shen, B. Liu, Q. Liu, and **Z. Li**, "Image Co-saliency Detection and Instance Co-segmentation using Attention Graph Clustering based Graph Convolutional Network", accepted, *IEEE Trans on Multimedia* (T-MM: IF 7.3), 2021.
38. **Q. Yang**, Z. Ma, Y. Xu, **Z. Li**, and J. Sun, "Inferring Point Cloud Quality via Graph Similarity", to appear, *IEEE Trans on Pattern Analysis & Machine Intelligence*, (T-PAMI: IF 23.6), 2020.
39. **Y. Li**, Y. Yi, D. Liu, **L. Li**, **Z. Li**, and H. Li, "Neural Network Based Cross-Channel Intra Prediction", *ACM Trans on Multimedia Computing Communication and Applications* (TOMM: IF 5.1), 2020.
40. **W. Jia**, **L. Li**, **Z. Li**, S. Zhao and S. Liu, Scalable Hash From Triplet Loss Feature Aggregation for Video De-Duplication, *Journal of Visual Communication & Image Representation* (JVCIR), 2020.
41. **L. Li**, **Z. Li**, S. Liu, H. Li, "Efficient Projected Frame Padding for Video-based Point Cloud Compression", accepted, *IEEE Transactions on Multimedia*,(T-MM: IF 7.3) 2020.
42. **L. Li**, **Z. Li**, S. Liu, H. Li, "Rate Control for Video-based Point Cloud Compression", accepted with *IEEE Transactions on Image Processing* (T-IP: IF 10.6), 2020.
43. **H. Zhang**, L. Song, **L. Li**, **Z. Li**, and X.K. Yang, "Compression Priors Assisted Convolutional Neural Network for Fractional Interpolation", to appear, *IEEE Transactions on Circuits and Systems for Video Technology*.(T-CSVT: IF 8.4)
44. **R. Hang**, **Z. Li**, Q. Liu, P. Ghamisi and S. Bhattacharyya, "Hyperspectral Image Classification with Attention Aided CNNs", to appear, *IEEE Trans. on Geoscience & Remote Sensing* (T-GRS: IF 8.2), 2020.
45. **W. Zhu**, Z. Ma, Y. Xu, L. Li, and **Z. Li**, "View-Dependent Dynamic Point Cloud Compression", *IEEE Transactions on Circuits and Systems for Video Technology* (T-CSVT: IF 8.4), 2020.
46. **Z. Zhang**, X. Zhao, X. Li, **L. Li**, S. Liu, and **Z. Li** "Fast DST-7/DCT-8 with Dual ImplementationSupport for Versatile Video Coding", accepted, *IEEE Trans on Circuits & Sys. for Video Tech* (T-CSVT: IF 8.4), 2020.
47. **R. Hang**, Z. Li, P. Ghamisi, D. Hong, G. Xia and Q. Liu, "Classification of Hyperspectral and LiDAR Data Using Coupled CNNs," in *IEEE Transactions on Geoscience and Remote Sensing*, (T-GRS: IF 8.2), vol. 58, no. 7, pp. 4939-4950, July 2020, doi: 10.1109/TGRS.2020.2969024.
48. **Li Li**, N. Yan, **Z. Li**, S. Liu, H. Li, " λ -domain Perceptual Rate Control for 360-degree Video Compression", accepted with *IEEE Journal of Selected Topics in Signal Processing*, (JSTSP: IF 7.69) 2020.
49. **L. Li**, **Z. Li**, S. Liu, H. Li, "Occupancy-map-based Rate Distortion Optimization and Partition for Video-based Point Cloud Compression", accepted, *IEEE Transactions on Circuits and Systems for Video Technology*, (T-CSVT: IF 8.4), 2019.
50. **L. Li**, **Z. Li**, V. Zakharchenko, J. Chen, and H. Li, "Advanced 3D Motion Prediction for Video Based Dynamci Point Cloud Compression", accepted, *IEEE Trans on Image Processing*, (T-IP: IF 10.6) 2019.
51. **D. F. Dewan**, **Y. Li**, **Z. Li**, S. Bhattacharyya, and G. York, "Multi-Scale Gradient Image Super-Resolution for

- Preserving SIFT Key Points in Low-Resolution Images”, special issue on deep learning in super resolution, *Signal Processing: Image Communication*, 2019.
52. W. Ji, **Z. Li**, H.V. Poor, W. Zhu, and C. Timmerer, “Guest Editorial: Multimedia Economics for Future Networks: Theory, Methods, and Applications”, *IEEE Journal on Selected Areas in Communication*, (J-SAC: IF 16.4), 2019.
 53. S. Schwarz, M. Preda, V. Baroncini, M. Budagavi, P. César, P. A. Chou, R. A. Cohen, M. Krivokuca, S. Lasserre, **Z. Li**, J. Llach, K. Mammou, R. Mekuria, O. Nakagami, E. Siahhan, A. J. Tabatabai, A. M. Tourapis, V. Zakharchenko: Emerging MPEG Standards for Point Cloud Compression. *IEEE J. Emerg. Sel. Topics Circuits Syst.* (JETCAS: IF 4.6) vol. 9(1): 133-148 (2019) .
 54. **Li Li**, **Z. Li**, Bin Li, Dong Liu, Houqiang Li, "Quadtree-based Coding Framework for High Density Camera Array based Light Field Image", in *IEEE Transactions on Circuits and Systems for Video Technology*, (T-CSVT: IF 8.4) 2019
 55. **Y. Li**, **L. Li**, D. Liu, H. Li, **Z. Li**, and F. Wu, “Learning a Convolutional Neural Network for Image Compact-Resolution”, *IEEE Trans on Image Processing*, (T-IP: IF 10.6), 2018.
 56. **L. Li**, **Z. Li**, X. Ma, H. Yang and H. Li, "Advanced Spherical Motion Model and Local Padding for 360 Video Compression," in *IEEE Transactions on Image Processing*, (T-IP: IF 10.6) vol. 28, no. 5, pp. 2342-2356, May 2019.
 57. **Z. Zhang**, **L. Li**, **Z. Li** and H. Li, “Mobile Visual Search Compression with Grassmann Manifold Embedding”, *IEEE Trans on Circuits & System for Video Technology*, (T-CSVT: IF 8.4), 2018.
 58. **L. Li**, H. Li, D. Liu, **Z. Li**, H. Yang, S. Lin, F. Wu, “An Efficient Four-Parameter Affine Motion Model for Video Coding”, *IEEE Trans on Circuits & System for Video Tech*, (T-CSVT: IF 8.4), 2018.
 59. **L. Li**, **Z. Li**, B. Li, D. Liu and H. Li, "Pseudo-Sequence-Based 2-D Hierarchical Coding Structure for Light-Field Image Compression," in *IEEE Journal of Selected Topics in Signal Processing*, (J-STSP: IF 7.5) vol. 11, no. 7, pp. 1107-1119, Oct. 2017, doi: 10.1109/JSTSP.2017.2725198.
 60. B.-W. Chen, W. Ji, **Z. Li**, “Guest Editorial for ACM TECS Special Issue on Effective Divide-and-Conquer, Incremental, or Distributed Mechanisms of Embedded Designs for Extremely Big Data in Large-Scale Devices”, *ACM Trans. Embed. Comput. Syst.* 16(3): 72:1-72:2 (2017)
 61. **X. Xin**, A. Nagar, G. Srivastava, **Z. Li**, F. Fernandes, A. Katsaggelos, "Large Scale Repository Search with Hash Collision Design Optimization", *IEEE Multimedia* 20(2): 62-71 (2013)
 62. **X. Xin**, **Z. Li**, and A. K. Katsaggelos, "Laplacian embedding and key points topology verification for large scale mobile visual identification", *Signal Processing: Image Communication*, special issue on mobile visual search, vol. 28(4): 323-333 (2013).
 63. **W. Ji**, **Z. Li**, and Y. Chen, “Joint Source-Channel Coding and Optimization for Layered Video Broadcasting to Heterogeneous Devices”, *IEEE Trans on Multimedia*, vol.14(2): 443-455 (2012).
 64. J. Yuan, G. Zhao, Yun Fu, **Z. Li**, A. K. Katsaggelos, Ying Wu, "Discovering Thematic Objects in Image Collections and Videos", *IEEE Trans. on Image Processing*, (T-IP: IF 10.6), vol.21(4): 2207-2219, April, 2012.
 65. **B. Liu**, **Z. Li**, L. Yang, and M. Wang, "Real-Time Video Copy-Location Detection in Large-Scale Repositories", *IEEE Multimedia*, vol. 18(3), July-September, 2011.
 66. **X. Wang**, **Z. Li**, and D. Tao, "Subspaces Indexing on Grassmann Manifold for Image Search", *IEEE Trans. on Image Processing*, (T-IP: IF 10.6) vol. 20(9), pp. 2627-2635, September, 2011.
 67. W. Shi, Y. Lu, **Z. Li**, J. Engelsma: "SHARC: A scalable 3D graphics virtual appliance delivery framework in cloud", *Journal of Network and Computer Applications*, vol. 34(4): 1078-1087 (2011)
 68. **X. Wang**, D. Tao, and **Z. Li**, "Entropy Controlled Laplacian Regularization for Least Square Regression", *Signal Processing*, vol. 90(6): 2043-2049 (2010), Jan. 2010.
 69. **Ying Li**, **Z. Li**, Mung Chiang and A. Robert Calderbank, "Content-Aware Distortion Fair Video Streaming in Congested Networks", *IEEE Trans. on Multimedia* (T-MM: IF 7.3) vol. 11(6), pp. 1182-1193, Oct. 2009.
 70. L. Gao, **Z. Li**, and A. K. Katsaggelos, "Luminance Filed Trajectory Based Video Indexing and Searching", *IEEE Trans. on Circuits & System for Video Tech* (T-CSVT: IF 8.4), vol. 19(10), Oct. 2009
 71. Y. Fu, **Z. Li**, J. Yuan, T. S. Huang, and Y. Wu, "Query Driven Model Localization in Pose Estimation and Face Recognition", *IEEE Trans. on Circuits & System for Video Tech* (T-CSVT: IF 8.4), vol. 18(12), pp. 1741-1752, December, 2008.
 72. Y. Yang, **Z. Li**, W. Shi, Y. Chen, and H. Xu, "Cross-Layer Optimization for State Update in Mobile Gaming", *IEEE Trans. on Multimedia* (T-MM: IF 7.3), vol. 10(5), pp. 701-710, August, 2008.
 73. **Z. Li**, F. Zhai, and A. K. Katsaggelos, "Joint Video Summarization and Transmission Adaptation for Energy

- Efficient Wireless Streaming", *EURASIP Journal on Advances in Signal Processing*, special issue on Wireless Video, vol. 2008, May, 2008.
74. J. Huang, **Z. Li**, M. Chiang, and A. K. Katsaggelos, "Joint Source Adaptation and Resource Allocation for Multi-User Wireless Video Streaming", *IEEE Trans. on Circuits & System for Video Tech (T-CSVT: IF 8.4)*, vol. 18 (5), pp. 582-595, May, 2008.
 75. Y. Fu, **Z. Li**, T. S. Huang, and A. K. Katsaggelos, "Locally adaptive subspace and similarity metric learning for visual data clustering and retrieval", *Journal of Computer Vision and Image Understanding (CVIU)*, vol. 110(3), pp. 390-402, June, 2008.
 76. **Z. Li**, J. Huang, M. Chiang, and A. K. Katsaggelos, "Intelligent Wireless Video Communication: Source Adaptation and Multi-User Collaboration", invited paper, special issue on Multimedia Communication, Ed. Changwen Chen, *China Journal of Communication*, December, 2006.
 77. J. Huang, **Z. Li**, M. Chiang, and A. K. Katsaggelos, "Pricing-based Rate Control and Joint Packet Scheduling for Multi-user Wireless Uplink Video Streaming", *Journal of Zhejiang University SCIENCE A*, special issue for 15th Packet Video Workshop (PV), 2006.
 78. **Z. Li**, A. K. Katsaggelos, and B. Bandhi, "Fast Video Shot Segmentation and Retrieval Based on Trace Geometry in Principal Component Space", *IEE Proceedings on Vision, Image and Signal Processing*, pp. 367-373, vol. 152(3), May, 2005.
 79. **Z. Li**, G. Schuster, A. K. Katsaggelos, "MINMAX Optimal Video Summarization and Coding", special issue on Analysis & Understanding for Media Adaptation, *IEEE Trans. on Circuits and System for Video Technology*, (T-CSVT: IF 8.4), pp. 1245-1256, vol. 15, no. 10, October, 2005.
 80. **Z. Li**, A. K. Katsaggelos, G. Schuster and B. Gandhi, "Rate-Distortion Optimal Video Summary Generation", *IEEE Trans. on Image Processing (T-IP: IF 10.6)*, pp. 1550-1560, vol. 14, no. 10, October, 2005.

Referred Conference Papers: (green indicates major conf)

1. J. Chen, Y. Li, P. Chen, S. Wang, and **Z. Li**, "Efficient Image Compression Through Extreme Image Rescaling", *IEEE Symposium on Circuits & System (ISCAS)*, London, 2025.
2. P. Maharjan, S. Maharjan, **Z. Li**, N. Rogers, and G. York, "Distributed Polarimetric SAR Compression with Joint Deblocking Using Side Information", *IEEE Symposium on Circuits & System (ISCAS)*, London, 2025.
3. H. Huang, W. Huang, Q. Yang, Y.-L. Xu and **Z. Li**, "A Hierarchical Compression Technique for 3D Gaussian Splatting Compression", *IEEE Int'l Conf on Audio, Speech and Signal Processing (ICASSP)*, 2025.
4. X. Liu, X. Wu, P. Zhang, S. Wang, **Z. Li**, and S. Kwong, "CompGS: Efficient 3D Scene Representation via Compressed Gaussian Splatting", *ACM Multimedia (MM)*, Melbourne, Australia, 2024.
5. X. Hu, W. Wu, and **Z. Li**, "RandommaskFormer: Light Weight Remote Sensing Scene Classification with Masked Transformer", *ACM Multimedia Asia (MM-Asia)*, Auckland, New Zealand, 2024.
6. Q. Yang, K. Yang, Y. Xing, Y.-L. Xu, and **Z. Li**, "A Benchmark for Gaussian Splatting Compression and Quality Assessment Study", *ACM Multimedia Asia (MM-Asia)*, Auckland, New Zealand, 2024.
7. T. Yang, W. Wu, and **Z. Li**, "Multi-Frame Sparse Convolutional Learning for Point Cloud Color Denoising", *ACM Multimedia Asia (MM-Asia)*, Auckland, New Zealand, 2024.
8. M. Talha, B. Kathariya, Z. Li, A. Akhtar, and G.van der Aweera, "Sparse Convolution Based Point Cloud Attributes Deblocking with Graph Fourier Latent Representation", *IEEE Multimedia Signal Processing Workshop (MMSP)*, West Lafayette, USA, 2024.
9. P. Maharjan, C. Marrs, and Z. Li, "End-to-End Compression of Complex-valued SAR Images", *IEEE Multimedia Signal Processing Workshop (MMSP)*, West Lafayette, USA, 2024.
10. **B. Kathariya**, **Z. Li**, and G. van der Auwera, "TSF-Net3D: TSF-Net for 3D Point Cloud Attribute Compression Artifacts Removal", *IEEE Int'l Conf on Image Processing (ICIP)*, Abu Dabi, 2024.
11. X. Hu, W. Wu, and **Z. Li**, "TWO-STAGE TRIPLETNET: LIGHT WEIGHT REMOTE SENSING SCENE CLASSIFICATION", *IEEE Int'l Conf on Image Processing (ICIP)*, Abu Dabi, 2024.
12. **S. Umair**, **B. Kathariya**, **Z. Li**, and G. van der Auwera, "RESNERF-PCAC: SUPER RESOLVING RESIDUAL LEARNING NERF FOR HIGH EFFICIENCY POINT CLOUD ATTRIBUTES CODING", *IEEE Int'l Conf on Image Processing (ICIP)*, Abu Dabi, 2024.
13. **C. Henry**, **P. Maharjan**, **Z. Li**, and G. York, "E2SIFT: Neuromorphic SIFT via Direct Feature Pyramid Recovery from Events", *IEEE Int'l Conf on Image Processing (ICIP)*, Abu Dabi, 2024.
14. **S. Mukherjee**, C. Beard, **Z. Li**, "MODIPHY: Multimodal Obscured Detection for IoT using PHantom Convolution-Enabled Faster YOLO", *IEEE Int'l Conf on Image Processing (ICIP)*, Abu Dabi, 2024.

15. R. Puttagunta, B. Kathariya, **Z. Li**, and G. York, "Multi-Scale Feature Fusion using Channel Transformers for Guided Thermal Image Super Resolution", *IEEE CVPR Workshop on Perception Beyond Visual Spectrum (PBVS)*, 2024. [**ranked #2 among 100+ teams**]
16. R. Liao, Z. Li, S. Battachayya, and G. York, "ViewDiffGait: View Pyramid Diffusion for Gait Recognition", *IEEE Automatic Face and Gesture Recognition (FG)*, Istanbul, Turkey, 2024.
17. M. Talha, B. Kathariya, **Z. Li** and G. van der Auwera, "MUSCON: Multi-scale Sparse Conv Learning for Point Cloud Attributes Deblocking", *IEEE Data Compression Conf (DCC)*, Snowbird, USA, 2024.
18. W. Hu, T. Jiang, B. Kathariya, V. Abrol, J. Zhang, and **Z. Li**, "Subspace Interpolation and Indexing on Stiefel and Grassmann Manifolds as a Lightweight Inference Engine", *IEEE BigData Conference*, Sorrento, Italy, 2023.
19. S. Xia, T. Fan, Y.-L. Xu, J. Hwang, and **Z. Li**, "Learning Dynamic Point Cloud Compression via Hierarchical Inter-frame Block Matching", *ACM Multimedia*, Ottawa, Canada, 2023.
20. C. Marrs, B. Kathariya, **Z. Li**, and G. York, "Plug-and-Play Joint Image Deblurring and Detection", *IEEE Multimedia Signal Processing (MMSP) Workshop*, Poitiers, France, 2023.
21. P. Maharjan, L. T. Vanfossan, **Z. Li**, and J. Shen, "Fast LoG SIFT Keypoint Detector", *IEEE Multimedia Signal Processing (MMSP) Workshop*, Poitiers, France, 2023.
22. C. Marrs, B. Kathariya, **Z. Li**, and G. York, "HiSytle: Reinventing Historic Portrait for 3D Colorization and Zero-shot Stylization", *IEEE Multimedia Signal Processing (MMSP) Workshop*, Poitiers, France, 2023.
23. P. Chen, B. Chen, W. Meng, S. Wang, **Z. Li**, "Visual Data Compression for Metaverse: Technology, Standard, and Challenges", *IEEE MetaCom*, Kyoto, Japan, 2023.
24. R. Puttagunta, **Z. Li**, S. Battacharyya, and G. York, "Appearance Label Balanced Triplet Loss for Multi-modal Aerial View Object Classification", *IEEE CVPR Workshop on Perception Beyond Visual Spectrum (PBVS)*, Vancouver, 2023. [**Best Paper Runner-Up**, winner and top ranked US team in PBVS challenge]
25. P. Wang, S. Wang, **Z. Li**, "Occupancy Map Guided Attributes Deblocking for Video-Based Point Cloud Compression", *IEEE Data Compression Conf (DCC)*, Snowbird, Utah, 2023.
26. C. Henry, M. S. Asif, and **Z. Li**, "Privacy Preserving Face Recognition with Lensless Camera", *IEEE Int'l Conf on Audio, Speech and Signal Processing (ICASSP)*, Rhode Island, Greece, 2023.
27. C. Henry, M. S. Asif, and **Z. Li**, "Light-weight Fisher Vector Transfer Learning for Video Deduplication", *IEEE Int'l Conf on Audio, Speech and Signal Processing (ICASSP)*, Rhode Island, Greece, 2023.
28. Z. Liu, F. Li, **Z. Li**, and B. Luo, "LoneNeuron: a Highly-effective Feature-domain Neural Trojan using Invisible and Polymorphic Watermarks", *ACM Conference on Computer and Communications Security (CSS)*, 2022.
29. Z. Liu, F. Li, J. Lin, **Z. Li**, and B. Luo. Hide and Seek: on the Stealthiness of Attacks against Deep Learning Systems. In *European Symposium on Research in Computer Security (ESORICS)*, 2022.
30. A. Akhtar, **Z. Li**, G. Auwera, J. Chen, "Dynamic Point Cloud Interpolation", in *IEEE Int'l Conf on Audio, Speech and Signal Processing (ICASSP)*, Singapore, 2022.
31. Y. Sun, **Z. Li**, L. Li, S. Wang, and W. Gao, "Optimization of compressive light field display in dual-guided learning", in *IEEE Int'l Conf on Audio, Speech and Signal Processing (ICASSP)*, Singapore, 2022.
32. C. Henry, B. Kathariya, M. S. Asif, **Z. Li** and G. York, "Aerial Image Classification through Thin Lensless Camera," *IEEE 5th Intl Conf. on Multimedia Information Processing and Retrieval (MIPR)*, CA, USA, 2022, pp. 27-30, doi: 10.1109/MIPR54900.2022.00012.
33. S. Huang, H. Chang, W. Wu, and **Z. Li**, "DPGIR: SIFT Recovery from a Hazy Image", *IEEE Int'l Conf on Multimedia & Expo (ICME)*, Taipei, 2022.
34. W. Wu, H. Chang, Y. Zheng, **Z. Li**, Z. Chen, and Z. Zhang, "Contrastive Learning-based Robust Object Detection under Smoky Conditions", *IEEE Computer Vision & Pattern Recognition Workshop*, New Orleans, 2022.
35. T. Fan, L. Gao, Y. Xu, **Z. Li** and D. Wang, "D-DPCC: Deep Dynamic Point Cloud Compression via 3D Motion Prediction", *Proc of IJCAI*, 2022.
36. H. Jiang, P. Maharjan, **Z. Li** and G. York, "DCT-based Residual Network for NIR Image Colorization", *IEEE Intl Conf on Image Processing (ICIP)*, Bordeaux, France, 2022.
37. C. Henry, B. Kathariya, M. S. Asif, **Z. Li**, and G. York, "Aerial Image Classification through Thin Lenseless Camera", *Int'l Conf on Multimedia Information Processing and Retrieval (MIPR)*, 2022.
38. L. Hou, L. Gao, Y. Xu, **Z. Li**, X. Xu and S. Liu, "Learning-based Intra-Prediction For Point Cloud Attribute Transform Coding", *IEEE Workshop on Multimedia Signal Processing (MMSP)*, Shanghai, China, 2022. (top 10% paper award)
39. B. Kathariya, **Z. Li**, H. Wang, Geert Van Der Auwera, "Multi-stage Locally and Long-range Correlated Feature

- Fusion for Learned In-loop Filter in VVC", *IEEE International Conference on Visual Communications and Image Processing (VCIP)*, Suzhou, China, 2022.
40. B. Kathariya, Z. Li, H. Wang, and M. Coban, "MULTI-STAGE SPATIAL AND FREQUENCY FEATURE FUSION USING TRANSFORMER IN CNN-BASED IN-LOOP FILTER FOR VVC", *Picture Coding Symposium (PCS)*, San Jose, 2022.
 41. P. Wang, W. Wu, Z. Li, and Y. Liu, "See SIFT in a Rain: Divide-and-conquer SIFT Key Point Recovery from a Single Rainy Image", *IEEE Visual Comm & Image Processing (VCIP) Conf*, München, Germany, 2021.
 42. Y. Mei, F. Li, L. Li and Z. Li, "Learn A Compression for Objection Detection - VAE with a Bridge", *IEEE Visual Comm & Image Processing (VCIP) Conf*, München, Germany, 2021.
 43. R. Liao, Z. Li, S. Bhattacharyya, and G. York, "Aerial Image Classification with Label Splitting and Optimized Triplet Loss Learning", *IEEE Visual Comm & Image Processing (VCIP) Conf*, München, Germany, 2021.
 44. P. Maharjan, N. Xu, X. Xu, and Z. Li, "DCTResNet: Transform Domain Image Deblocking for Motion Blur Images", *IEEE Visual Comm & Image Processing (VCIP) Conf*, München, Germany, 2021.
 45. B. Kathariya, Z. Li, J. Chen, and G. Aweera, "Gradient Compression with a Variational Coding Scheme for Federated Learning", *IEEE Visual Comm & Image Processing (VCIP) Conf*, München, Germany, 2021.
 46. G. Xie, Z. Li, A. Mehmood, S. Bhattacharyya, "Plug-and-Play Deblurring for Robust Object Detection", *IEEE Visual Comm & Image Processing (VCIP) Conf*, München, Germany, 2021.
 47. Md A. Arefeen, S. T. Nimi, Md Y. Uddin, and Z. Li, "A Lightweight ReLU-Based Feature Fusion for Aerial Scene Classification", *IEEE Int'l Conf on Image Processing (ICIP)*, Alaska, USA, 2021.
 48. J. Wang, D. Ding, Z. Li, and Z. Ma, "Multiscale Point Cloud Geometry Compression", *IEEE Data Compression Conference (DCC)*, Snowbird, USA, 2021.
 49. B. Kathariya, L. Li, Z. Li, L. Duan, and S. Liu, "Network Update Compression for Federated Learning", *IEEE Visual Communication & Image Processing Conf (VCIP)*, Hong Kong, 2020.
 50. A. Akhtar, W. Gao, L. Li, Z. Li, X. Zhang, and S. Liu, "Point Cloud Geometry Prediction Across Spatial Scale using Deep Learning", *IEEE Visual Communication & Image Processing Conf (VCIP)*, Hong Kong, 2020.
 51. K. Zhang, L. Wang, D. Liu, B. Liu, Q. Liu and Z. Li, "Dual Temporal Memory Network for Efficient Video Object Segmentation", *ACM Multimedia (MM)*, Seattle, 2020.
 52. Y. Sun, L. Li, Z. Li, and S. Liu, "Referenceless Rate-Distortion Modeling with Learning from Bitstream and Pixel Features", *ACM Multimedia (MM)*, Seattle, 2020.
 53. Y. Mei, F. Li, L. Li, and Z. Li, "Activation Map Saliency Guided Filtering for Efficient Image Compression for Vision Tasks", *IEEE Asilomar Conference on Signals, Systems and Computers*, Monterey, 2020.
 54. Y. Sun, L. Li, Z. Li, and S. Liu, "YOCO: Light-Weight Rate Control Model Learning", *IEEE Int'l Conference on Image Processing (ICIP)*, Abu Dhabi, 2020.
 55. W. Jia, L. Li, Z. Li, X. Zhang and S. Liu, "Residual Guided Deblocking with Deep Learning", *IEEE Int'l Conference on Image Processing (ICIP)*, Abu Dhabi, 2020.
 56. R. Hang, Z. Li, Q. Liu, and S. S. Bhattacharyya, "PRINET: A Prior Driven Spectral Super-Resolution Network", *IEEE International Conf on Multimedia & Expo*, London, 2020.
 57. W. Jia, L. Li, Z. Li, S. Zhao, S. Liu, "Triplet Loss Feature Aggregation for Scalable Hash", *IEEE Int'l Conf on Audio, Speech and Signal Processing (ICASSP)*, Barcelona, 2020.
 58. L. Pan, F. Christophe, T. Mikkonen, Z. Li, and S. S. Bhattacharyya. Simulating Spiking Neural Networks with Timed Dataflow Graphs. In Proceedings of the *IEEE Conference on Artificial Intelligence Circuits and Systems (AICAS)*, Genoa, Italy, March 2020.
 59. L. Li, Z. Li, S. Liu, and H. Li, "Video-based Compression for Plenoptic Point Clouds", *IEEE Data Compression Conf (DCC)*, 2020.
 60. Y. Zhou, Z. Li, and H. Yin, "Stereoscopic Visual Discomfort Prediction Using Multi-scale DCT Features", *ACM Multimedia*, Nice, France, 2019.
 61. P. Maharjan, L. Li, Z. Li, N. Xu, C. Ma, and Y. Li, "Improving Extreme Low-Light Image Denoising via Residual Learning", *IEEE Int'l Conf on Multimedia & Expo (ICME)*, Shanghai, 2019.
 62. L. Li, Z. Li, S. Liu, H. Li, "Occupancy-map-based rate distortion optimization for video-based point cloud compression", *IEEE Int'l Conf on Image Processing (ICIP)*, 2019.
 63. A. Akhtar, B. Kathariya, Z. Li, "Low Latency Scalable Point Cloud Communication", *IEEE Int'l Conf on Image Processing (ICIP)*, 2019.
 64. H. Zhang, L. Li, L. Song, X.-K. Yang, Z. Li, "Advanced CNN Based Motion Compensation Fractional Interpolation", *IEEE Int'l Conf on Image Processing (ICIP)*, 2019.
 65. D. F. Noor, L. Li, Z. Li, S. Bhattacharyya, "Multi-Frame Super Resolution with Deep Residual Learning on

- Flow Registered Non-Integer Pixel Images", *IEEE Int'l Conf on Image Processing (ICIP)*, 2019.
66. A. Akhtar, J. Ma, R. Shafin, J. Bai, L. Li, **Z. Li**, and L. Liu, "Low Latency Scalable Point Cloud Communication in VANETs using V2I Communication", *IEEE Int'l Conf on Communication (ICC)*, Shanghai, 2019.
 67. D. F. Noor, Y. Li, **Z. Li**, S. Bhattacharyya, G. York, "Gradient Image Super-Resolution for Low Resolution Image Recognition", *IEEE Int'l Conf on Audio, Speech and Signal Processing (ICASSP)*, 2019.
 68. Z. Zhang, Y. Li, L. Li, **Z. Li**, S. Liu, "Multiple Linear Regression for High Efficiency Video Intra Coding", *IEEE Int'l Conf on Audio, Speech and Signal Processing (ICASSP)*, 2019.
 69. Y. Xu, W. Zhu, Y. Xu, **Z. Li**, "Dynamic Point Cloud Geometry Compression via Patch-wise Polynomial Fitting", *IEEE Int'l Conf on Acoustics, Speech and Signal Processing (ICASSP)*, Brighton, UK, 2019.
 70. L. Li, **Z. Li**, V. Zakharchenko, and J. Chen, "Advanced 3D Motion Prediction for Video Based Point Cloud Attributes Compression", *IEEE Data Compression Conf (DCC)*, Snowbird, USA, 2019.
 71. Z. Zhang, X. Zhao, X. Li, **Z. Li**, and S. Liu, "Fast Adaptive Multiple Transform for Versatile Video Coding", *IEEE Data Compression Conf (DCC)*, Snowbird, USA, 2019.
 72. B. Kathariya, V. Zakharchenko, **Z. Li**, and J. Chen, "Level-of-detail generation using binary-tree for lifting scheme in LiDAR point cloud attributes coding", *IEEE Data Compression Conf (DCC)*, Snowbird, USA, 2019.
 73. L. Li, **Z. Li**, Y. Li, B. Kathariya, and S. Bhattacharyya, "Incremental Deep Neural Network Pruning based on Hessian Approximation", *IEEE Data Compression Conf (DCC)*, Snowbird, USA, 2019.
 74. Duc Huy Hoang Nguyen, R. Puttagunta, **Z. Li**, and R. Derakhshani, "User Re-Identification Using Clothing Information for Smartphones", *IEEE Int'l Symposium on Technologies for Homeland Security*, Woburn, MA, 2018, **Best Paper Award**.
 75. Y. Shao, Q. Zhang, G. Li and **Z. Li**, "Hybrid Point Cloud Attribute Compression Using Slice-based Layered Structure and Block-based Intra Prediction" *ACM Multimedia*, Seoul, Korea, 2018.
 76. Y. Li, L. Li, **Z. Li**, J. Yang, N. Xu, D. Liu, H. Li, "A Hybrid Neural Network for Chroma Intra Prediction", *IEEE Int'l Conf on Image Processing (ICIP)*, Athens, Greece, 2018.
 77. Y. Sun, L. Li, and **Z. Li**, "A Machine Learning Approach to Accurate Sequence Level Rate Control Scheme for Video Coding", *IEEE Int'l Conf on Image Processing (ICIP)*, Athens, Greece, 2018.
 78. Xin Zhao, Li Li, **Z. Li**, Xiang Li, Shan Liu, "Coupled Primary and Secondary Transform for Next Generation Video Coding", *IEEE Visual Communication & Image Processing Conf (VCIP)*, Taiwan, 2018.
 79. Zhuoqun Wang, **Z. Li**, Yiling Xu, Jun Sun, "Selective Convolutional Features based Generalized-mean Pooling for Fine-grained Image Retrieval", *IEEE Visual Communication & Image Processing Conf (VCIP)*, Taiwan, 2018.
 80. Zhaobin Zhang, Yue Li, Li Li, **Z. Li**, Shan Liu, "Combining Intra Block Copy and Neighboring Samples Using Convolutional Neural Network for Image Coding", *IEEE Visual Communication & Image Processing Conf (VCIP)*, Taiwan, 2018.
 81. N. Reddy, D. Noor, **Z. Li**, and R. Derakhshani, "Multi-Frame Super Resolution Ocular Biometrics", *IEEE Computer Society Biometrics Workshop*, 2018.
 82. B. Kathariya, L. Li, **Z. Li**, and J. Alvarez, "Scalable Point Cloud Geometry Coding with Binary Tree Embedded Quadtree", to appear, *IEEE Int'l Conf. on Multimedia & Expo (ICME)*, San Diego, USA, 2018.
 83. B. Kathariya, L. Li, **Z. Li**, and J. Alvarez, "Lossless Dynamic Point Cloud Geometry Compression with Inter Compensation and Traveling Salesman Prediction", *IEEE Data Compression Conference (DCC)*, Snow Bird, 2018.
 84. S. Zhao, G. Muppala, **Z. Li**, D. Medhi, "Smooth Streaming With MPEG-DASH Using SDN-Based Application-Aware Networking". *Intl Conf on Computing, Networking and Communications (ICNC)2018*: 77-81
 85. Y. Shao, Z. Zhang, **Z. Li**, and G. Li, "Attribute Compression of 3D Point Clouds Using Laplacian Sparsity Optimized Graph Transform", *IEEE Visual Communication & Image Processing (VCIP) Conf*, St. Petersburg, FL, 2017.
 86. Y. Li, L. Li, **Z. Li**, and H. Li, "Hierarchical Piece-Wise Canonical Correlation Analysis Projections for Efficient Intra-Prediction Coding", *IEEE Visual Communication & Image Processing (VCIP) Conf*, St. Petersburg, FL, 2017.
 87. B. Kathariya, K. Ainala, **Z. Li**, and R. Joshi, "Embedded Binary Tree For Dynamic Point Cloud Geometry Compression with Graph Signal Resampling and Prediction", *IEEE Visual Communication & Image Processing (VCIP) Conf*, St. Petersburg, FL, 2017.
 88. L. Li, **Z. Li**, M. Bugadavi, and H. Li, "PROJECTION BASED ADVANCED MOTION MODEL FOR CUBIC

- MAPPING FOR 360-DEGREE VIDEO”, *IEEE Intl Conf on Image Processing (ICIP)*, Beijing, 2017.
89. Z. Zhang, L. Li, Z. Li, and H. Li, “Visual Query Compression with Locality Preserving Projection on Grassmann Manifold”, *IEEE Intl Conf on Image Processing (ICIP)*, Beijing, 2017.
 90. E. Cornwell, L. Li, Z. Li, and Y. Sun, “An Efficient Compression Scheme for the Multi-Camera Light Field Images”, *IEEE Multimedia Signal Processing Workshop (MMSP)*, London, 2017.
 91. W. Zhu, L. Li, Z. Li and Y. Xu, “Lossless Point Cloud Geometry Compression via Binary Tree Partition and Intra Prediction”, *IEEE Multimedia Signal Processing Workshop (MMSP)*, London, 2017.
 92. S. Feng, Z. Li, Y. Xu, and J. Sun, “Compact Scalable Hash from Deep Learning Features Aggregation for Content De-duplication”, *IEEE Multimedia Signal Processing Workshop (MMSP)*, London, 2017.
 93. L. Li, Z. Li, B. Li, D. Liu, and H.-Q. Li, “Pseudo Sequence based 2-D hierarchical reference structure for Light-Field Image Compression”, *IEEE Data Compression Conference (DCC)*, Snow Bird, 2017.
 94. S. Zhao, Z. Li, D. Medhi, P. Lai, and S. Liu, “Study of User QoE Improvement for Dynamic Adaptive Streaming over HTTP (MPEG-DASH)”, *Intl Conference on Computing, Networking and Communications (ICNC)*, Santa Clara, 2017.
 95. Z. Li, S. Zhao, D. Medhi, and I. Bouazizi, “Wireless Video Traffic Bottleneck Coordination with DASH SAND Framework”, *IEEE Visual Communication and Image Processing (VCIP) Conf*, Chengdu, China, 2016.
 96. W. Huang, Y.-L. Xu, and Z. Li, “A New AL-FEC Coding Scheme for Mobile Video Broadcasting with Limited Feedback”, *IEEE Multimedia Signal Processing (MMSP) Workshop*, Montreal, Canada, 2016.
 97. K. Aninala, R. Mekuria, B. Kathariya, Z. Li, Y.-K. Wang and R. Joshi, “An improved enhancement layer for octree based point cloud compression with plane projection approximation”, *SPIE App. of Digital Image Processing*, San Diego, 2016.
 98. D. Noor, Z. Li, and A. Nagar, “ROBUST OBJECT RE-IDENTIFICATION WITH GRASSMANN SUBSPACE FEATURE FOR KEY POINTS AGGREGATION”, *IEEE Int'l Conf on Image Processing*, Phoenix, Arizona, USA, 2016.
 99. S. Zhao, Z. Li, and D. Medhi, “Low Delay Streaming of DASH Content with WebRTC Data Channel”, *IEEE/ACM Int'l Workshop on Quality of Service (IWQoS)*, Beijing, 2016.
 100. S. Xie, Y.-L. Xu, and Z. Li, “DASH Sub-Representation with Temporal QoE Driven Layering”, *IEEE PacketVideo Workshop*, Seattle, 2016.
 101. S. Zhao, Z. Li, and D. Medhi, “Low Delay MPEG DASH Streaming over the WebRTC Data Channel”, *IEEE PacketVideo Workshop*, Seattle, 2016.
 102. Z. Zheng, Z. Li, A. Nagar, and K. Park, “COMPACT DEEP NEURAL NETWORKS FOR DEVICE BASED IMAGE CLASSIFICATION”, *IEEE Int'l Conference on Multimedia 7 Expo (ICME), Workshop on Distributed and Cooperative Visual Recognition and Analysis (DCVRA)*, Torino, Italy, 2015.
 103. V. Frago, G. Srivastava, A. Nagar, Z. Li, and M. Turk, “Cascade of Box (CABOX) Filters for Optimal Scale Space Approximation”, *Proc of the 4th IEEE Int'l Workshop on Mobile Vision*, Columbus, OH, 2014.
 104. A. Nagar, Z. Li, G. Srivastava, and K. Park, “AKULA : Adaptive Clustering Aggregation for Visual Search”, *IEEE Data Compression Conference (DCC)*, Snow Bird, UT, 2014.
 105. Z. Li, I. Bouazizi, “Light Weight Video Fingerprint for Playback Verification in MPEG DASH System”, *Proceedings of IEEE PacketVideo Workshop*, San Jose, 2013.
 106. X. Xin, Z. Li, Z. Ma, and A. K. Katsaggelos, “Robust Feature Selection with Self-Matching Score”, *IEEE Int'l Conf on Image Processing (ICIP)*, Sydney, Australia, 2013.
 107. J. Springer, X. Xin, Z. Li, J. Watt, A. K. Katsaggelos, “Forest Hashing: Expediting Large Scale Image Retrieval”, *IEEE Int'l Conf on Audio Speech and Signal Processing (ICASSP)*, Vancouver, Canada, 2013.
 108. X. Xin, Z. Li, Z. Ma, and A. K. Katsaggelos, “Spectral Approximation to Point Set Similarity Metric”, *IEEE Int'l Conf on Multimedia & Expo (ICME)*, San Jose, USA, 2013.
 109. M. Dong, P.-H. Lai, Z. Li, “Can we identify smartphone app by power trace?”, *Proceedings of Asia Pacific DAC 2013*: 373-375.
 110. X. Xin, Z. Li, and A. K. Katsaggelos, “Laplacian SIFT for Compact Descriptor in Visual Search”, accepted, *IEEE Int'l Conference on Audio, Speech and Signal Processing (ICASSP)*, Kyoto, Japan, 2012.
 111. H. Xu, J. Wang, Z. Li, G. Zeng, S. Li, “Complementary Hashing for Approximate Nearest Neighbor Search”, *IEEE Int'l Conference on Computer Vision (ICCV)*, Barcelona, Spain, 2011.
 112. W. Ji, Z. Li, and Y.-Q. Chen, “Content-Aware Utility-Fair Video Streaming in Wireless Broadcasting Networks”, *IEEE Int'l Conf on Image Processing*, 2011.
 113. H. Zheng, Z. Li and “Indexed Spatio-Temporal Appearance Models for Query-Driven Video Action Recognition”, *IEEE International Conference on Multimedia and Expo (ICME)*, Barcelona (Spain), July 2011.

114. Y. Yuan, H. Zheng, **Z. Li**, and J. Huang, "Utility-Driven Distributed Transmission Coordination for Video Communication over Ad Hoc Wireless Networks", *IEEE International Conference on Multimedia and Expo (ICME)*, Barcelona (Spain), July 2011.
115. P. Ruiz, S.D. Babacan, L. Gao, Z. Li, R. Molina, and A.K. Katsaggelos, "Video Retrieval Using Sparse Bayesian Reconstruction" , *IEEE International Conference on Multimedia and Expo (ICME)*, Barcelona (Spain), July 2011.
116. W. Ji, and Z. Li, "Joint Scalable Video and Digital Fountain Coding for Heterogeneous QoS Video Broadcasting", *IEEE Int'l Conference on Multimedia & Expo (ICME)*, Barcelona (Spain), July 2011..
117. X. Wang, Z. Li, L. Zhang, and J. Yuan, "Grassmann Hashing for Approximate Nearest Neighbor Search in High Dimensional Space", *IEEE Int'l Conference on Multimedia & Expo (ICME)*, 2011.
118. W. Ji , Z. Li and Y. Chen, "Heterogeneous QoS Video Broadcasting with Optimal Joint Layered Video and Digital Fountain Coding", *IEEE Int'l Conference on Communication (ICC)*, Kyoto, Japan, 2011.
119. W. Shi, Y. Lu, Z. Li, J. Engelsma, "Scalable Support for 3D Graphics Applications in Cloud", *IEEE Third International Conference on Cloud Computing*, Miami, Florida, 2010
120. Z. Ye, X. Chen, and Z. Li, "Video Based Mobile Location Search with Large Set of SIFT Points in Cloud", *ACM Multimedia 2010 Workshop - Mobile Cloud Media Computing*, Florence, Italy, 2010.
121. W. Ji, and Z. Li, "Joint Layered Video and Digital Fountain Coding for Multi-Channel Video Broadcasting", *Proc of ACM Multimedia*, Florence, Italy, 2010.
122. B. Liu, Z. Li, M. Wang, and A. K. Katsaggelos, "IN-SEQUENCE VIDEO DUPLICATE DETECTION WITH FAST POINT-TO-LINE MATCHING", *Proc of IEEE Int'l Conf on Image Processing*, Hong Kong, 2010.
123. H. Zheng, M. Wang, and Z. Li, "AUDIO-VISUAL SPEAKER IDENTIFIATION WITH MULTIVIEW DISTANCE METRIC LEARNING", *Proc of IEEE Int'l Conf on Image Processing*, Hong Kong, October, 2010.
124. N. He, J. Cao, Z. Li, Y. Ren: "JVEC: Joint Video Adaptation and Erasure Code for Wireless Video Streaming Broadcast", *Proc of IEEE ICC*, 2010: 1-5, Capetown, South Africa.
125. N. He, Y. Xu, J. Cao, Z. Li, Hongyang Chen, and Y. Ren, "ROME: Rateless Online MDS Code for Wireless Data Broadcasting," *Proc. IEEE Globecom*, Miami, USA, 2010.
126. B. Liu, Z. Li, and M. Wang, "Scalable Video Near Duplicate Detection via Compact Curve Matching", *IEEE Int'l Conf on Multimedia & Expo*, Singapore, July, 2010.
127. Y. Yuan, H. Zheng, Z. Li and D. Zhang, "VIDEO ACTION RECOGNITION WITH SPATIOTEMPORAL GRAPH EMBEDDING AND SPLINE MODELING", *Proc of IEEE Int'l Conf on Acoustics, Speech and Signal Processing*, Dallas, USA, March, 2010.
128. Li Gao, Z. Li, A. K. Katsaggelos, "A VIDEO RETRIEVAL ALGORITHM USING RANDOM PROJECTIONS", *IEEE Int'l Conf on Image Processing*, Egypt, November, 2009.
129. H. Zheng, Z. Li, and Y. Fu, , "Efficient Human Action Recognition by Luminance Field Trajectory and Geometry Information ", *IEEE Int'l Conf on Multimedia & Expo*, New York, June, 2009.
130. Ying Li, Z. Li, Mung Chiang and A. Robert Calderbank, "Energy-Efficient Video Transmission Scheduling for Wireless Peer-to-Peer Live Streaming", *Proc of IEEE Consumer Communication and Networking Conference (CCNC)*, Las Vegas, USA, 2009.
131. Z. Li, Ying Li, Mung Chiang and A. Robert Calderbank, "Optimal Transmission Scheduling For Scalable Wireless Video Broadcast with Rateless Erasure Correction Code", *Proc of IEEE Consumer Communication and Networking Conference (CCNC)*, Las Vegas, USA, 2009.
132. Y. Li, Z. Li, M. Chiang, and R. Calderbank, "Content Aware Distortion-Fair Video Streaming in Networks", *Proc of IEEE GLOBECOM*, New Orleans, USA, 2008.
133. Z. Li, Y. Fu, S. Yan, and T. S. Huang, "Real-Time Human Action Recognition by Luminance Field Trajectory Analysis", *ACM Multimedia*, Vancouver, Canada, 2008.
134. L. Gao, Z. Li, and A. K. Katsaggelos, "A Kd-tree Based Dynamic Indexing Scheme For Video Retrieval And Geometry Matching", *Proc of IEEE Int'l Workshop on Multimedia Analysis & Processing (IMAP)*, St. Thomas, U.S. Virgin Island, August, 2008.
135. Y. Wang, T. Yu, L. Shi, and Z. Li, "Using Human Body Gestures As Inputs for Gaming via Depth Analysis", poster paper, *Proceedings of IEEE International Conference on Multimedia & Expo (ICME)*, Hanover, Germany, 2008.
136. Y. Li, Z. Li, M. Chiang and A. Robert Calderbank, "Video Transmission Scheduling for Peer-to-Peer Live Streaming System", oral paper, *Proceedings of IEEE International Conference on Multimedia & Expo (ICME)*, Hanover, Germany, 2008.
137. Z. Li, J. Huang, and A. K. Katsaggelos, "Utility Driven Video Segment Scheduling for Peer-to-Peer Live Video

- Streaming System", 45th Allerton Conference on Communication, Control and Computing, Monticello, IL, USA, 2007.
138. Y. Yang, Z. Li, W. Shi, Y. C. Chen, and H. Xu, "Network-Aware State Update in Large Scale Mobile Games", oral paper, IEEE Int'l Conf on Computer Communication & Networking (ICCCN), Hawaii, USA, 2007.
 139. J. Yuan, Z. Li, Y. Fu, Y. Wu, and T. S. Huang, "Discover Spatial Patterns By Efficient Candidate Pruning", oral paper, *IEEE Int'l Conference on Image Processing*, San Antonio, USA, 2007.
 140. Y. Fu, Z. Li, X. Zhou, and T. S. Huang, "Laplacian Affinity Propagation For Semi-Supervised Object Classification", **Best Paper (DoCoMo Innovative Paper) Award**, *IEEE Int'l Conference on Image Processing*, San Antonio, USA, 2007.
 141. Y. Fu, J. Yuan, Z. Li, T. S. Huang, and Y. Wu, "Expert-Model Face Recognition with Query-Driven Locally Adaptive Fisher Faces", oral paper, IEEE Int'l Conference on Image Processing, San Antonio, USA, 2007.
 142. F. Zhai, Z. Li and A. K. Katsaggelos, "Joint Source-Channel Coding for Multi-User Wireless Video Communication", Proc of *IEEE Int'l Conf on Multimedia & Expo (ICME)*, Beijing, China, 2007.
 143. Z. Li, Y. Fu, J. Yuan, T. S. Huang, and Y. Wu, "Query Driven Local Linear Discriminant Models for Head Pose Estimation", **Best Paper Candidate** from HCI track, Proc. of *IEEE Int'l Conf on Multimedia & Expo (ICME)*, Beijing, China, 2007.
 144. L. Gao, Z. Li, and A. K. Katsaggelos, "Robust Video Indexing and Retrieval with Additive Noise and Frame Drops", invited, *IEEE Int'l Workshop on Content Based Multimedia Indexing (CBMI)*, 2007.
 145. L. Gao, Z. Li, A. K. Katsaggelos, "LUFT (Luminance Field Trace) Tree: A Video Shot Segmentation and Indexing Scheme for Fast Retrieval", invited, *Proceedings of Int'l Conference on Visual Info Engineering (VIE)*, Sept., 2006.
 146. L. Gao, Z. Li, A. K. Katsaggelos, "Fast Video Shot Retrieval with Luminance Field Trace Indexing and Geometry Matching", *Proceedings of IEEE Int'l Conference on Image Processing (ICIP)*, Atlanta, USA, 2006.
 147. Z. Li, L. Gao, and A. K. Katsaggelos, "Locally Embedded Linear Spaces for Efficient Video Shot Indexing and Retrieval", **Best Paper Award**, *Proceedings of IEEE Int'l Conference on Multimedia & Expo (ICME)*, Toronto, Canada, 2006.
 148. Z. Li, J. Huang, and A. K. Katsaggelos, "Pricing based collaborative multi-user video streaming over power constrained wireless down link", oral paper, *Proceedings of IEEE Int'l Conference on Acoustics, Speech and Signal Processing (ICASSP)*, Toulouse, France, 2006.
 149. P. V. Pahalawatta, Z. Li, F. Zhai, and A. K. Katsaggelos, invited paper, "Rate-Distortion Optimization for Internet Video Summarization and Transmission", *Proceedings of IEEE Int'l Workshop on Multimedia Signal Processing (MMSP)*, Shanghai, China 2005.
 150. Z. Li, Q. Cheng, A. K. Katsaggelos, and F. Ishtiaq "Video Summarization and Transmission Adaptation for Very Low Bit Rate Multiuser Wireless Uplink Video Communication", invited paper, *Proceedings of IEEE Int'l Workshop on Multimedia Signal Processing (MMSP)*, Shanghai, China, 2005.
 151. Z. Li, G. M. Schuster, and A. K. Katsaggelos, "Video summarization for multipath communication", *Proceedings of IEEE Int'l Conference on Image Processing (ICIP)*, Geona, Italy, 2005.
 152. Z. Li, F. Zhai, and A. K. Katsaggelos, "Video Summarization for Energy Efficient Wireless Streaming", invited special session paper, *Proceedings of SPIE Visual Communication and Image Processing (VCIP)*, Beijing, China, 2005.
 153. R. Ansorge, E. Kirchmeier, Z. Li, G. M. Schuster, and A. K. Katsaggelos, "Optimal Intra-Coded Video Summarization for Two Bandwidth Limited Channels", *Proceedings of Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS)*, Montreux, Switzerland, 2005.
 154. Z. Li, A. K. Katsaggelos, and B. Gandhi "Fast video shot retrieval by trace geometry matching in principal component space", *Proceedings of IEEE Int'l Conf. on Image Processing (ICIP)*, Singapore, 2004.
 155. Z. Li, G. Schuster, A. K. Katsaggelos, and B. Gandhi, "Optimal Video Summarization with Bit Budget Constraint", oral paper, *Proceedings of IEEE Int'l Conf. on Image Processing (ICIP)*, Singapore, 2004.
 156. Z. Li, A. K. Katsaggelos, and B. Gandhi, "Fast Video Retrieval with Sequence Trace in Principal Component Space", oral paper, *Proceedings of Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS)*, Lisboa, Portugal, 2004.
 157. Z. Li, G. Schuster, A. K. Katsaggelos and B. Gandhi, "MINMAX Optimal Video Summarization", *Proceedings of Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS)*, Lisboa, Portugal, 2004.
 158. Z. Li, A. K. Katsaggelos, G. Schuster and B. Gandhi, "Rate-Distortion Optimal Video Summarization: A Dynamic Programming Solution", *Proceedings of IEEE Int'l Conference on Audio, Speech and Signal Processing (ICASSP)*, Montreal, Canada, 2004.

159. Z. Li, A. K. Katsaggelos and B. Gandhi, "Optimal Video Summary Generation and Coding", oral paper, *Proceedings of IEEE Int'l Conf on Multimedia and Expo (ICME)*, Baltimore, MD, July 2003.
160. Z. Li and A. K. Katsaggelos, "A Color Vector Quantization Based Video Coder", *Proceedings of IEEE Int'l Conf. on Image Processing (ICIP)*, Rochester, N.Y., Sept 2002.

66 Patents (Issued and Pending)

Issued patents and dates:

1. US-7065521-B2: Zhu Li, Bhavan Gandhi, Brett L. Lindsley, Method for fuzzy logic rule based multimedia information retrieval with text and perceptual features (2006-06-20)
2. US-6963378-B2: Zhu Li, Bhavan Gandhi, Aggelos K. Katsaggelos, Method and apparatus for reduction of visual content (2005-11-08)
3. US-7697752-B2: Dongge Li, Bhavan R. Gandhi, Zhu Li, Method and apparatus for performing object detection (2010-04-13)
4. US-8948518-B2: Xin Xin, Zhu Li, Aggelos K. Katsaggelo, Scalable query for visual search (2015-02-03)
5. US-8761248-B2: Zhu Li, Faisal Ishtiaq, Method and system for intelligent video adaptation (2014-06-24)
6. US-8731236-B2: Zhu Li, Jun Tian, Hong Heather Yu, System and method for content protection in a content delivery network (2014-05-20)
7. US-8379995-B2: Anthony R. May, Shih-Ta Hsiang, Faisal Ishtiaq, Zhu Li In-picture prediction for video coding (2013-02-19)
8. US-9727586-B2: Zhu Li, Ankur Saxena, Abhishek Nagar, Gaurav Srivastava, Kong Posh Bhat, Incremental visual query processing with holistic feature feedback (2017-08-08)
9. US-8718378-B2: Zhu Li, Xin Xin, Aggelos K. Katsaggelos Image topological coding for visual search (2014-05-06)
10. US-8755605-B2: Xin Xin, Zhu Li, Aggelos K. Katsaggelos System and method for compact descriptor for visual search (2014-06-17)
11. US-9246830-B2: Zhu Li, Yong Wang, Dong-Qing Zhang, Hong Heather Yu, "Method and apparatus for multimedia queue management" (2016-01-26)
12. US-9235780-B2: Zhu Li, Xin Xin, Abhishek Nagar, Gaurav Srivastava, Kong Posh Bhat, Felix Carlos Fernandes, "Robust keypoint feature selection for visual search with self matching score" (2016-01-12)
13. US-9788078-B2: Zhu Li, Imed Bouazizi, Kyungmo PARK Enhanced distortion signaling for MMT assets and ISOBMFF with improved MMT QoS descriptor having multiple QoE operating points (2017-10-10)
14. US-9635407-B2: Zhu Li, Imed Bouazizi, Youngkwon Lim, Kyungmo PARK Method and apparatus for bottleneck coordination to achieve QoE multiplexing gains (2017-04-25)
15. US-10033824-B2: Zhu Li, Imed Bouazizi, Kyungmo Park, "Cache manifest for efficient peer assisted streaming" (2018-07-24).
16. US-9875386-B2: Xin Xin, Zhu Li, Aggelos K. Katsaggelos System and method for randomized point set geometry verification for image identification (2018-01-23)
17. US-2016373500-A1 Zhu Li, Imed Bouazizi, Youngkwon Lim, Kyungmo PARK, Method and apparatus for distributed bottleneck coordination in dash with resource pricing (2020/01/20).
18. US20230316804A1 Zhu Li, System and Methods for Image Feature Recognition Using A Lensless Camera, (2023-10-31)
19. US12058333B1 Zhu Li and Brian Galyin, System and methods for upsampling of decompressed data after lossy compression using a neural network, (2024-08-06)
20. US12068761B1 Zhu Li, Brian Galyin and Paras Maharjan, System and methods for upsampling of decompressed time-series data using a neural network, (2024-08-20).

21. US12095484B1 Zhu Li, Brian Galyin and Paras Maharjan, System and methods for upsampling of decompressed genomic data after lossy compression using a neural network, (2024-09-17)
22. US12093972B1 Zhu Li, Brian Galyin and Paras Maharjan, Upsampling of decompressed financial time—series data using a neural network, (2024-09-17)
23. US12119848B1 Zhu Li and Paras Maharjan, System and method for learning-based lossless data compression, (2024-10-15)
24. US12119848B1 Zhu Li and Paras Maharjan, System and method for learning-based lossless data compression. (2024-10-15)
25. US12125143B2 Zhu Li, Systems and methods for neural-network based video encoding, (2024-10-22).
26. US12160610B2 Zhu Li, Systems and methods for encoding three-dimensional media content. (2024-12-03)
27. US12175638B1 Joshua Cooper, Aliasghar Riahi, Charles Yeomans, Zhu Li, System and methods for low-light image enhancement utilizing denoising preprocessing with wavelet decomposition (2024-12-24)
28. US12192263B2 Zhu Li, Systems and methods for quality of experience computation (2025-01-07)
29. US12190573B1 Zhu Li and Paras Maharjan, Systems and methods for hyperspectral image generation (2025-01-07).
30. US12198273B2 Zhu Li, Systems and methods for mesh geometry prediction for high efficiency mesh coding (2025-01-14)
31. US12199643B1 Zhu Li, Paras Maharjan and Brian Galyin, Controllable lossy compression system using joint learning. (2025-01-14)
32. US12198304B1 Zhu Li, Paras Maharjan, Real time discrete cosine transform image and video processing with convolutional neural network architecture.(2025-01-14)
33. US12224044B1 Zhu Li, Paras Maharjan and Brian Galyin, System and methods for upsampling of decompressed genomic data after lossy compression using a neural network (2025-02-11)

Pending patent applications:

34. US-2009320123-A1 Yang Yu, Bogdan O. Carbutar, Zhu Li, Weidong Shi, Method and apparatus for user recognition employing motion passwords
35. US-2008123741-A1 Zhu Li, Faisal Ishtiaq Method and system for intelligent video adaptation
36. US-2004177069-A1 Zhu Li, Bhavan Gandhi, Brett Lindsley Method for fuzzy logic rule based multimedia information retrieval with text and perceptual features
37. US-2008226173-A1 Junsong Yuan, Wei Wang, Zhu Li, Dongge Li Method and apparatus for video clip searching and mining
38. US-2007036227-A1 Faisal Ishtiaq, Bhavan Gandhi, Zhu Li Video encoding system and method for providing content adaptive rate control
39. US-2012278441-A1 Zhu Li, Jun Tian, Hong Heather Yu System and Method for Quality of Experience Estimation
40. US-2013016912-A1 Zhu Li, Xin Xin, Aggelos K. Katsaggelos Image Topological Coding for Visual Search
41. US-2010086048-A1 Faisal Ishtiaq, Shih-Ta Hsiang, Zhu Li, Tony May System and Method for Video Image Processing
42. US-2007140550-A1 Dongge Li, Bhavan Gandhi, Zhu Li Method and apparatus for performing object detection
43. US-2005125821-A1 Zhu Li, Bhavan Gandhi, Aggelos Katsaggelos Method and apparatus for characterizing a video segment and determining if a first video segment matches a second video segment
44. US-2014101195-A1 Zhu Li, Ankur Saxena, Abhishek Nagar, Gaurav Srivastava, Kong Posh Bhat

Incremental visual query processing with holistic feature feedback

45. US-2004085483-A1 Zhu Li, Bhavan Gandhi, Aggelos Katsaggelos Method and apparatus for reduction of visual content
46. US-2013016908-A1 Xin Xin, Zhu Li, Aggalos K. Katsaggelos System and Method for Compact Descriptor for Visual Search
47. US-2013089107-A1 Zhu Li, Yong Wang, Dong-Qing Zhang, Hong Heather Yu Method and Apparatus for Multimedia Queue Management
48. US-2013142439-A1 Xin Xin, Zhu Li, Aggelos K. Katsaggelos Scalable Query for Visual Search
49. US-2014310314-A1 Zhu Li, Abhishek Nagar, Gaurav Srivastava, Felix Carlos Fernandes Matching performance and compression efficiency with descriptor code segment collision probability optimization
50. US-2012183173-A1 Zhu Li, Jun Tian, Hong Heather Yu System and Method for Content Protection in a Content Delivery Network
51. US-2014185941-A1 Zhu Li, Xin Xin, Abhishek Nagar, Gaurav Srivastava, Kong Posh Bhat, Felix Carlos Fernandes Robust keypoint feature selection for visual search with self matching score
52. US-2014201368-A1 Imed Bouazizi, Mark Edward Trayer, Kong Posh Bhat, Zhu Li, Youngkwon Lim Method and apparatus for enforcing behavior of dash or other clients
53. US-2013121598-A1 Xin Xin, Zhu Li, Aggelos K. Katsaggelos System and Method for Randomized Point Set Geometry Verification for Image Identification
54. US-2009323575-A1 Zhu Li, Ethan Y. Chen, Faisal Ishtiaq, Hua Xu, John M. Harris Method and apparatus for multicasting within a wireless communication network
55. US-2015281801-A1 Zhu Li, Imed Bouazizi, Kyungmo PARK Enhanced distortion signaling for mmt assets and isobmff with improved mmt qos descriptor having multiple qoe operating points
56. US-2014195560-A1 Xin Xin, Zhu Li, Abhishek Nagar, Gaurav Srivastava, Zhan Ma, Kong Posh Bhat, Felix Carlos Fernandes Two way local feature matching to improve visual search accuracy
57. WO-2015012659-A1 Abhishek Nagar, Xin Xin, Zhu Li, Gaurav Srivastava, Zhan MA, Felix Carlos Fernandes, Kong Posh Bhat Two way local feature matching to improve visual search accuracy
58. US-2014201200-A1 Zhu Li, Abhishek Nagar, Kong Posh Bhat, Xin Xin, Gaurav Srivastava, Felix Carlos Fernandes Visual search accuracy with hamming distance order statistics learning
59. US-2009285499-A1 Anthony R. May, Shih-Ta Hsiang, Faisal Ishtiaq, Zhu Li In-picture prediction for video coding
60. US-2014198998-A1 Gaurav Srivastava, Zhu Li, Abhishek Nagar, Ankur Saxena, Zhan Ma, Felix Carlos Fernandes Novel criteria for gaussian mixture model cluster selection in scalable compressed fisher vector (scfv) global descriptor
61. EP-1576539-A3 Bhavan Gandhi, Aggelos K. Katsaggelos, Zhu Li Method and apparatus for reduction of visual content .
62. WO2019/068259A1 Zhu Li, Shan Liu, and Jose Alvarez, Point Cloud Coding.
63. US 20230351642 A1, Zhu Li, Predictive coding of lenslet images.
64. US 20230344974 A1, Zhu Li, Learning-based light field compression for tensor display.
65. US20240144596A1, Zhu Li and Tao Chen, Systems and methods for mesh geometry prediction for high efficiency mesh coding
66. US20240202979A1, Zhu Li and Tao Chen, Graph signal frequency-domain motion compensation for point cloud attributes coding

1. **Z. Li**, J. Tian, H. Yu, and Y.-K Wang, "Scaled Eigen Appearance Feature (SEAF) for Video Search over Large Repository", ISO/IEC JTC1/SC29/WG11/MPEG2011/M19376, Daegu, Korea, 2011.
2. **Z. Li**, J. Tian, H. Yu, and Y.-K Wang, "Large Scale Video Search with CDVS Likelihood Pruning ", ISO/IEC JTC1/SC29/WG11/MPEG2011/M19377, Daegu, Korea, 2011.
3. **Z. Li**, X. Xin and A. K. Katsaggelos, "Huawei- Northwestern Data Set for MPEG CDVS", ISO/IEC JTC1/SC29/WG11/MPEG2011/M20018, Geneva, Switzerland, 2011.
4. **Z. Li**, X. Xin and A. K. Katsaggelos, "Very Low Bit Rate Topological Coding and Verification via Graph Spectral Analysis", ISO/IEC JTC1/SC29/WG11/MPEG2011/M21362, Torino, Italy, 2011.
5. X. Xin, **Z. Li**, and A. K. Katsaggelos, "Laplacian SURF for Robust Visual Search", ISO/IEC JTC1/SC29/WG11/MPEG2011/M21361, Torino, Italy, 2011.
6. X. Xin, **Z. Li**, and A. K. Katsaggelos, "Scalable Coding and Verification Scheme for Visual Search", ISO/IEC JTC1/SC29/WG11/MPEG2011/M21363, Torino, Italy, 2011.
7. X. Xin, **Z. Li**, and A. K. Katsaggelos, "Huawei-Northwestern Response to MPEG CDVS Call for Proposal", ISO/IEC JTC1/SC29/WG11/MPEG2011/M22751, Geneva, Switzerland, 2011.
8. **Z. Li**, "On Improving CDVS Annotation Quality", ISO/IEC JTC1/SC29/WG11/MPEG2011/M22862, Geneva, Switzerland, 2011.
9. **Z. Li**, et. al, "Incremental CDVS Query Processing", ISO/IEC JTC1/SC29/WG11/MPEG2012/M27108, Shanghai, China, 2012.
10. **Z. Li**, et. al, "CDVS CE7: 2-Way SIFT Matching to Improve Image Matching Accuracy", ISO/IEC JTC1/SC29/WG11/MPEG2013/M28240, Geneva, Switzerland, 2013.
11. **Z. Li**, et. al, "CDVS CE7: Robust Feature Selection with Self-Matching Score", ISO/IEC JTC1/SC29/WG11/MPEG2013/M28241, Geneva, Switzerland, 2013.
12. **Z. Li**, et. al, "CDVS CE2: Improve Local Descriptor Compression with SIFT Level Ground Truth", ISO/IEC JTC1/SC29/WG11/MPEG2013/M28278, Geneva, Switzerland, 2013.
13. **Z. Li**, et. al, "CDVS CE8: SKIP Mode - Reconstructing Global Descriptor from Local Descriptors at Server End", ISO/IEC JTC1/SC29/WG11/MPEG2013/M28279, Geneva, Switzerland, 2013.
14. **Z. Li**, et. al, "CDVS CE8: Differential Coding of Global Descriptor from Local Descriptors", ISO/IEC JTC1/SC29/WG11/MPEG2013/M28280, Geneva, Switzerland, 2013.
15. **Z. Li**, et. al, "CDVS CE1: Improve Global Descriptor Matching with Order Statistics on Hamming Distance", ISO/IEC JTC1/SC29/WG11/MPEG2013/M28281, Geneva, Switzerland, 2013.
16. G. Srivastava, A. Nagar, **Z. Li**, K. Park, and F. Fernandes, "CDVS: Two-Way Key Point Feature Matching to Improve Image Matching and Retrieval Performance", ISO/IEC JTC1/SC29/WG11/MPEG2013/M29359, Incheon, Korea, 2013.
17. A. Nagar, G. Srivastava, **Z. Li**, K. Park, and F. Fernandes, "CDVS: Parameter Simplification and Matching Performance Improvement with Heat Kernel Correlation Modeling", ISO/IEC JTC1/SC29/WG11/MPEG2013/M29360, Incheon, Korea, 2013.
18. **Z. Li**, A. Nagar, G. Srivastava, K. Park, and F. Fernandes, "CDVS: Collision Prob Optimized Global Descriptor Masks for Compression Efficiency and Matching Performance Improvement", ISO/IEC JTC1/SC29/WG11/MPEG2013/M29361, Incheon, Korea, 2013.
19. Victor Fragoso, A. Nagar, G. Srivastava, **Z. Li**, "CDVS image matching performance study with alternative interesting points detection and description schemes", ISO/IEC JTC1/SC29/WG11/MPEG2013/m30193, Vienna, Austria, 2013.
20. Victor Fragoso, A. Nagar, G. Srivastava, **Z. Li**, "CDVS: Samsung's Response to CE-1", ISO/IEC JTC1/SC29/WG11/MPEG2013/m30446, Vienna, Austria, 2013.
21. G. Srivastava, Victor Fragoso, A. Nagar, **Z. Li**, "CDVS: CABOX TM Implementation and Acceleration Notes ", ISO/IEC JTC1/SC29/WG11/MPEG2013/m30480, Vienna, Austria, 2013.
22. A. Nagar, G. Srivastava, Victor Fragoso, **Z. Li**, "CDVS Software Model Improvement: Selective 2-Way Matching", ISO/IEC JTC1/SC29/WG11/MPEG2013/m30513, Vienna, Austria, 2013.
23. Victor Fragoso, A. Nagar, G. Srivastava, **Z. Li**, and K. Park, "CDVS CE1: Parallel CABOX Filtering and Key Points Detection", ISO/IEC JTC1/SC29/WG11/MPEG2013/m31490, Geneva, Switzerland, 2013.
24. A. Nagar, **Z. Li**, G. Srivastava, and K. Park, "CDVS CE2: AKULA – Adaptive Cluster Aggregation", ISO/IEC JTC1/SC29/WG11/MPEG2013/m31491, Geneva, Switzerland, 2013.
25. **Z. Li**, and I. Bouazizi, "DASH: Light Weight Video Fingerprints for Video Playback Verification", ISO/IEC JTC1/SC29/WG11/MPEG2013/m32492, San Jose, USA, 2014.
26. A. Nagar, **Z. Li**, G. Srivastava, and K. Park, "CDVS: Entropy Enhanced AKULA for Key Points Aggregation",

- ISO/IEC JTC1/SC29/WG11/MPEG2013/m32493, San Jose, USA, 2014.
27. **Z. Li**, A. Nagar, G. Srivastava and K. Park, “CDVS: GRASF - Grassmann Subspace Feature for Key Points Aggregation”, ISO/IEC JTC1/SC29/WG11/MPEG2013/m32536, San Jose, USA, 2014.
 28. G. Srivastava, **Z. Li**, A. Nagar, and K. Park, “CDVS: ALP Acceleration with Box Filtering”, ISO/IEC JTC1/SC29/WG11/MPEG2013/m32544, San Jose, USA, 2014.
 29. **Z. Li**, and I. Bouazizi, “MMT Amd1: Multiple QoE Operating Points Signalling in MMT ADC”, ISO/IEC JTC1/SC29/WG11/MPEG2013/m33237, Valencia, Spain, 2014.
 30. **Z. Li**, I. Bouazizi and K. Park, “MMT Amd1: Enhanced Distortion Signalling for MMT Enabled Video Streams”, ISO/IEC JTC1/SC29/WG11/MPEG2014/m33238, Valencia, Spain, 2014.
 31. **Z. Li** and I. Bouazizi, “FF: Temporal Quality Signalling in ISO Based Media File Format”, ISO/IEC JTC1/SC29/WG11/MPEG2014/m33239, Valencia, Spain, 2014.
 32. **Z. Li** and K. Park, “MMT Cache Manifest”, ISO/IEC JTC1/SC29/WG11/MPEG2014/m34393, Sapporo, Japan, 2014.
 33. **Z. Li** and K. Park, “MMT Amd1: ADC Quality Signalling Alignment with ISOBMFF”, ISO/IEC JTC1/SC29/WG11/MPEG2014/m34394, Sapporo, Japan, 2014.
 34. **Z. Li**, I. Bouazizi, and K. Park, “Quality Signalling for DASH Sub-representation”, ISO/IEC JTC1/SC29/WG11/MPEG2014/m34395, Sapporo, Japan, 2014.
 35. **Z. Li**, I. Bouazizi, and Y. Lim, “MMT IG: Traffic Aggregation for MMTP Multicasting in On-Demand Video Delivery”, ISO/IEC JTC1/SC29/WG11/MPEG2014/m34635, Strasbourg, France, 2014.
 36. **Z. Li**, I. Bouazizi, Y. Lim, and K. Park, “MMT IG: Bottleneck Coordination to Achieve QoE Multiplexing Gains”, ISO/IEC JTC1/SC29/WG11/MPEG2014/m35261, Strasbourg, France, 2014.
 37. **Z. Li**, and I. Bouazizi, “DASH: Aggregated Temporal Quality Signalling for DASH Sub-representations”, ISO/IEC JTC1/SC29/WG11/MPEG2014/m35262, Strasbourg, France, 2014.
 38. J. Lee, K. Park, **Z. Li**, et. al., “MMT: Proposal for mobile MMT”, ISO/IEC JTC1/SC29/WG11/MPEG2014/m35262, Geneva, Switzerland, 2015.
 39. **Z. Li**, I. Bouazizi, and Y. Lim., “MMT: Multi-Source Display Synchronization via Rate Agnostic Content Fingerprinting”, ISO/IEC JTC1/SC29/WG11/MPEG2014/m35262, Geneva, Switzerland, 2015.
 40. **Z. Li**, I. Bouazizi, et. al., “MMT: Proposal for mobile MMT”, ISO/IEC JTC1/SC29/WG11/MPEG2014/m35262, Geneva, Switzerland, 2015.
 41. Zhaobin Zhang, Li Li, **Zhu Li**, Jose Alvarez, and Shan Liu, “Point Cloud Attributes Coding with Laplacian Sparsity Optimized Graph Transforms”, ISO/IEC JTC1/SC29/WG11/MPEG2017/m41622, Macau, China, 2017.
 42. Wenjie Zhu, **Z. Li**, Li Li, Jose Alvarez, Shan Liu, Yi-Ling Xu, “Lossless Point Cloud Geometry Coding with Binary Tree Approximation and TSP Prediction”, ISO/IEC JTC1/SC29/WG11/MPEG2017/m41653, Macau, China, 2017.
 43. Biren Kathariya, Li Li, **Z. Li**, Vlad Zakharchenko, Jianle Chen, “PCC CE 3.1 BTQT Test Model Integration”, ISO/IEC JTC1/SC29/WG11/MPEG218/m42732, San Diego, USA, 2018.
 44. Li Li, **Z. Li**, and Shan Liu, “[VPCC] [New Contribution] Occupancy-map-based rate distortion optimization”, ISO/IEC JTC1/SC29/WG11/MPEG2020/m52765, Bruxelles, Belgium, 2020.
 45. Yixin Mei, **Z. Li** and Fan Li, “[VCM]Activation Map Saliency Guided Filtering for Efficient Image Compression for Vision Tasks”, ISO/IEC JTC1/SC29/WG11/MPEG2020/m52766, Bruxelles, Belgium, 2020.