CURRICULUM VITAE

Zhou Wang
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University of Waterloo
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Positions
- 2019 – present, Canada Research Chair, Natural Sciences and Engineering Research Council (NSERC)
- 2018 – 2019, University Research Chair, University of Waterloo
- 2015 – present, Professor, Dept. of Electrical & Computer Engineering, University of Waterloo
- 2013 – present, Co-Founder and Chief Scientist, SSIMWAVE Inc.
- 2011 – 2015, Associate Professor, Dept. Electrical & Computer Engineering, University of Waterloo
- 2007 – 2011, Assistant Professor, Dept. of Electrical & Computer Engineering, University of Waterloo
- 2005 – 2007, Assistant Professor, Dept. of Electrical Engineering, University of Texas at Arlington
- 2002 – 2005, Howard Hughes Postdoctoral Research Associate, New York University

Education
- 2001, Ph.D., Electrical & Computer Engineering, The University of Texas at Austin, USA
- 1995, M.E., Electronic & Communication Engineering, South China University of Technology, China
- 1993, B.E., Electronic & Information Engineering (with minor in Applied Mathematics), Huazhong University of Science & Technology, China

Significant Awards and Recognitions
- 2024, **Outstanding Performance Award**, Faculty of Engineering, University of Waterloo
- 2021, **Technology Emmy Award**, National Academy of Television Arts and Sciences, as Chief Scientist of award recipient: SSIMWAVE Inc.
- 2021, **Excellence in Graduate Supervision**, Faculty of Engineering, University of Waterloo
- 2019, **Canada Research Chair** (Tier 1) in Multimedia Quality-of-Experience, NSERC
- 2018, **Fellow of Royal Society of Canada - Academy of Science**, Royal Society of Canada
- 2018, **University Research Chair**, University of Waterloo
- 2017, **Research Excellence Award**, Faculty of Engineering, University of Waterloo
- 2017, **IEEE Signal Processing Society Sustained Impact Paper Award**, IEEE Signal Processing Society
- 2016, **Fellow of Canadian Academy of Engineering**, Canadian Academy of Engineering
- 2015, **Primetime Engineering Emmy Award**, Academy of Television Arts and Sciences
- 2015, **Member of College of New Scholars, Artists & Scientists**, Royal Society of Canada
- 2014, **E.W.R. Steacie Memorial Fellowship**, NSERC
- 2014, **Fellow of IEEE**, Institute of Electrical and Electronic Engineers
- 2014, **Distinguished Performance Award**, Faculty of Engineering, University of Waterloo
- 2013, **IEEE Signal Processing Magazine Best Paper Award**, IEEE Signal Processing Society
- 2012, **ECE Research Award**, Dept. of Electrical & Computer Engineering, University of Waterloo
- 2009, **IEEE Signal Processing Society Best Paper Award**, IEEE Signal Processing Society
- 2009, **Early Researcher Award**, Ontario Ministry of Research and Innovation

Technical Society Membership and Journal Editorial Positions
- 2022 – present, Senior Editor, *IEEE Journal of Selected Topics in Signal Processing*
- 2019 – present, Member, *IEEE Signal Processing Society Image, Video and Multidimensional Signal Processing Technical Committee*
- 2015 – 2019, Senior Area Editor, *IEEE Transactions on Image Processing*
- 2016 – 2018, Associate Editor, *IEEE Transactions on Circuits and Systems for Video Technology*
- 2013 – 2015, Member, *IEEE Signal Processing Society Multimedia Signal Processing Technical Committee*
- 2009 – 2014, Associate Editor, *IEEE Transactions on Image Processing*
- 2006 – 2010, Associate Editor, *Pattern Recognition*
- 2006 – 2010, Associate Editor, *IEEE Signal Processing Letters*

Invited Speech, Conference Organization and Reviews
- Keynote/plenary/invited speeches of **100+** times in North America, Asia, Australia and Europe
- General Co-Chair, TPC Co-Chair, Workshop Co-Chair, Area Chair, Plenary Chair, Special Session Chair, Registration Chair, and TPC Member for **50+** international conferences
- Judge for MIT TR35 China
- Reviewer for **50+** international journals, **60+** international conferences, and **10+** funding agencies

Student Supervision
- 2005 – present, supervised **60+** highly qualified personnel (HQPs), including Master's students, PhD students, Postdoctoral Fellows, and Visiting PhD students
- 2007 – present, supervised **40+** undergraduate students on fourth-year design projects, undergraduate research assistants, undergraduate student research awards, and engineering design projects

Student Awards and Recognitions
- 2024, Postdoctoral Fellow E. Rezk won prestigious **Alice Wilson Award** by Royal Society of Canada
- 2024, Postdoctoral Fellow E. Rezk won competitive **NSERC Postdoctoral Fellowship**
- 2024, MASc student S. Chowdhury won competitive **NSERC Canada Graduate Scholarship**
- 2023, PhD student M. Eisapor won competitive **Ontario Graduate Scholarship** and **President's Graduate Scholarship**
- 2022, Undergraduate Research Assistant Raymond Zhou won **IEEE Signal Processing Society Travel Grant** to attend IEEE International Conference on Image Processing
- 2022, Postdoctoral Fellow W. Zhou won prestigious **ACM SIGMM Outstanding Dissertation Award**
- 2022, PhD student Z. Wang won competitive **Jon W. Mark Graduate Scholarship**
- 2022, Undergraduate Research Assistant won **IEEE Signal Processing Society Travel Grant** to IEEE International Conference on Image Processing
- 2021, PhD student M. Eisapor won **Savaas Chamberlain Endowment Award**
- 2021, Undergraduate Research Assistant Raymond Zhou won **President's Scholarship of Distinction Research Award**
- 2021, PhD student M. Eisapor won competitive **Ontario Graduate Scholarship** and **President's Graduate Scholarship**
- 2020, PhD student Z. Duanmu won competitive **Jon W. Mark Graduate Scholarship**
- 2020, MASc student M. Naseri won competitive **Vector Institute Scholarship in AI**

- 2020, MASc student C. Li won competitive **Huawei Graduate Scholarship**
- 2020, PhD student S. Athar won **University of Waterloo Teaching Assistantship Award**
- 2019, MASc student X. Guo won competitive **Vector Institute Scholarship in AI**
- 2018, PhD student Z. Duanmu won competitive **Huawei Graduate Scholarship in AI**
- 2018, PhD student R. Mohammadi Nasiri won **University of Waterloo Teaching Assistantship Award**
- 2018, PhD student W. Liu won **Student Travel Grant** to attend ACM Multimedia conference
- 2018, PhD student K. Ma, **Finalist of Governor General's Gold Medal**
- 2018, PhD student Z. Duanmu won **NSERC Alexander Graham Bell Canada Graduate Scholarship**
- 2017, PhD graduate A. Rehman won **Martin Walmsley Award for Entrepreneurship**, by Ontario Centres of Excellence
- 2017, MASc student Z. Li awarded **Huawei Graduate Scholarship**
- 2017, PhD student Z. Duanmu awarded **Carl Pollock Scholarship**
- 2017, PhD student S. Athar won **Sandford Fleming Foundation Teaching Assistantship Excellence Award**
- 2017, PhD student S. Athar won **University of Waterloo Teaching Assistantship Award**
- 2017, MASc student Z. Li awarded **Richard & Elizabeth Madter Scholarship**
- 2017, former Postdoc Fellow T. Zhao won prestigious **China Young Talent Award**
- 2016, PhD student S. Athar won **University of Waterloo Teaching Assistantship Award**
- 2015, PhD student K. Ma won **China Scholarship Council International Scholarship**
- 2015, Master's student Z. Duanmu won **NSERC Canada Graduate Scholarship**
- 2015, PhD student S. Athar won **University of Waterloo Teaching Assistantship Award**
- 2014, PhD student I. Kowalik-Urbaniak won **Honorable Mention Poster Award** at SPIE Medical Imaging Conference
- 2014, PhD student J. Wang won **IEEE Travel Grant** to IEEE International Conference on Multimedia and Expo
- 2013, PhD student K. Zeng won **Chinese Government Award of Outstanding Student Abroad**
- 2013, PhD student H. Yeganeh won **Best Speaker Award**, UW-ECE Grad Research Seminar
- 2012, MASc student M. Rostami won **Outstanding Achievement in Graduate Studies** (awarded to 3 Master's level students per year across all disciplines in University of Waterloo)
- 2012, PhD student K. Zeng won **Best Speaker Award**, UW-ECE Grad Research Seminar
- 2012, PhD student K. Zeng won **IEEE Signal Processing Society Travel Grant** to IEEE International Conference on Image Processing
- 2012, MASc student M. Rostami won **IEEE Signal Processing Society Travel Grant** to IEEE International Conference on Image Processing
- 2012, PhD student A. Rehman won **Best Speaker Award**, UW-ECE Grad Research Seminar
- 2011, PhD student I. Kowalik-Urbaniak won **Best Student Poster Award** at European Workshop on Visual Information Processing
- 2011, PhD student A. Rehman won **IEEE Signal Processing Society Travel Grants** to IEEE International Conference on Image Processing
- 2011, Supervised undergraduate Capstone team (N. McCallum et al.) won **AMD Award for Most Socially Responsible Design Project**
- 2010, PhD student H. Yeganeh received **NSERC Industrial Postgraduate Scholarship**
- 2010, PhD student K. Zeng won **IEEE Signal Processing Society Travel Grant** to IEEE International Conference on Image Processing

- 2010, PhD student A. Rehman won **IEEE Signal Processing Society Travel Grant** to IEEE International Conference on Image Processing
- 2008, PhD student Q. Li won **Best Student Paper Award** at IEEE International Conference on Image Processing

Teaching
- ECE207/ECE342: Signals and Systems (undergraduate level) – W2008, W2009, S2010(1), S2010(2), F2012(1), F2012(2), F2013(2)
- ECE318: Communication Systems (undergraduate level) – F2011, W2014
- ECE313/ECE413: Digital Signal Processing (undergraduate level) – S2016, S2018, S2020, F2022, F2023, F2024, F2025
- ECE417: Image Processing (undergraduate level) – W2014, W2022, W2023, W2024, W2025
- ECE613/ECE710-T13: Image Processing and Visual Communication (graduate level) – W2008, F2009, F2012, F2013, F2016, F2017, F2018, F2019, F2020, W2022, W2023, W2024, W2025
- ECE710-T16: Digital Signal Processing (undergraduate level) – W2009, F2010, S2016, F2021
- ECE200A/ECE300B: Electrical and Computer Engineering Practice (undergraduate level) – F2011, F2013
- ECE499: Engineering Project (undergraduate level) – from F2009 to W2014
- EE4328: Introduction to Digital Image Processing (Univ. of Texas Arlington, undergraduate level), F2006
- EE5350: Digital Signal Processing (Univ. of Texas Arlington, graduate level), F2005
- EE5359: Advanced Image Processing and Visual Communications (Univ. of Texas Arlington, undergraduate level) – S2006, S2007

Funded Research Projects
- 2022 – 2026, Transforming pathology using artificial intelligence to improve patient outcome and hospital efficiency, ORF Research Excellence Round 10, C$1,721,681, Role: co-PI (PI: K. Plataniotis; co-PIs: A. Moshovos, C. Rowsell, P. Diamandis)
- 2023 – 2025, Grain-aware video quality assessment and encoding optimization in streaming media applications, MITACS Accelerate program, C$180,000, Role: PI
- 2019 – 2025, Multimedia quality-of-experience, Canada Research Chair Program, NSERC/University of Waterloo, C$1,890,000, Role: PI
- 2018 – 2024, End-to-end perceptual quality-of-experience measurement and optimization to reshape modern video communication systems, NSERC Discovery Program, C$456,000, Role: PI
- 2020 – 2022, Quality modeling, coding and streaming of 360 degree video, Xperi/Rovi Inc. University Partnership Grant, C$364,000, Role: PI
- 2019 – 2022, Video quality-of-experience assessment based on advanced machine learning technologies, MITACS Accelerate program, C$120,000, Role: PI
- 2017 – 2020, Visual quality-of-experience testing across dynamic range, spatial resolution, frame rate, data rate, display device and viewing condition, SSIMWAVE Inc. Research Grant, C$200,000, Role: PI
- 2013 – 2018, Quality-of-visual-experience: perceptual assessment, compression and enhancement, NSERC Discovery Program, NSERC Discovery Accelerator Supplement, C$120,000, Role: PI
- 2013 – 2018, Quality-of-visual-experience: perceptual assessment, compression and enhancement, NSERC Discovery Program, C$305,000, Role: PI

- 2016 – 2017, Automated instantaneous video quality-of-experience measurement on consumer devices, NSERC Idea-to-Innovation Program, C$125,000, Role: PI
- 2014 – 2016, An Infrastructure for Quality-of-Visual-Experience Research, NSERC Research Tools and Instruments, C$149,993, Role: PI
- 2014 – 2016, Exploring the frontiers of quality-of-visual-experience research, NSERC Steacie Memorial Fellowship, C$250,000, Role: PI
- 2014 – 2016, Modeling human behavioral responses to distortions for visual quality assessment, Royal Society (UK) International Exchanges, £12,000 Role: Co-I (PI: H. Liu)
- 2013 – 2016, Advanced 3D video technologies: quality assessment, display, keying and communications, NSERC Strategic Project Grant Program, C$594,000, Role: PI
- 2015 – 2015, Prototype Perceptual Video Encoder Development Based on Structural Similarity Quality Criterion, NSERC Idea-to-Innovation Program, C$60,000, Role: PI
- 2014 – 2015, Prototype Product Development of Device-Adapted Video Quality-of-Experience Analyzer, NSERC Idea-to-Innovation Program, C$125,000, Role: PI
- 2013 – 2015, Video encoder and quality assessment, Qualcomm Inc. gift fund, US$30,000, Role: PI
- 2013 – 2013, Development of Perceptual Video Quality Analyze, OCE Voucher for Commercialization, C$30,000, Role: PI
- 2012 – 2013, Prototype Perceptual Video Encoder Development Based on Structural Similarity Quality Criterion, NSERC Idea-to-Innovation, C$124,000, Role: PI
- 2012 – 2012, Prototype Perceptual H.264/AVC Video Encoder Development, OCE C4 POP, C$40,000, Role: PI
- 2012 – 2013, Quality assessment and enhancement of compressed medical images, OCE Collaborative Research, C$108,000, Role: PI (co-PIs: E.R. Vrscay, D.A. Koff)
- 2011 – 2013, Objective quality assessment and its use in optimizing diagnostically lossless compression of medical images, NSERC CRD, C$83,082, Role: PI (co-PIs: E.R. Vrscay, D.A.Koff)
- 2011 – 2013, Medical image compression and quality assessment, Agfa Healthcare Inc., C$54,000, Role: PI (co-PIs: E.R. Vrscay, D.A.Koff)
- 2011 – 2011, Efficient algorithm for all-hardware motion prediction in H.264/AVC video encoding, NSERC Engage, C$25,000, Role: PI
- 2009 – 2014, Enhancing the perceptual experience in network visual communications, ERA Award, C$190,000, Role: PI
- 2008 – 2013, Perceptual image processing, NSERC Discovery, C$90,000, Role: PI

Publications
- **270+** publications with **110,000+** citations by Google Scholar statistics

Citations per year
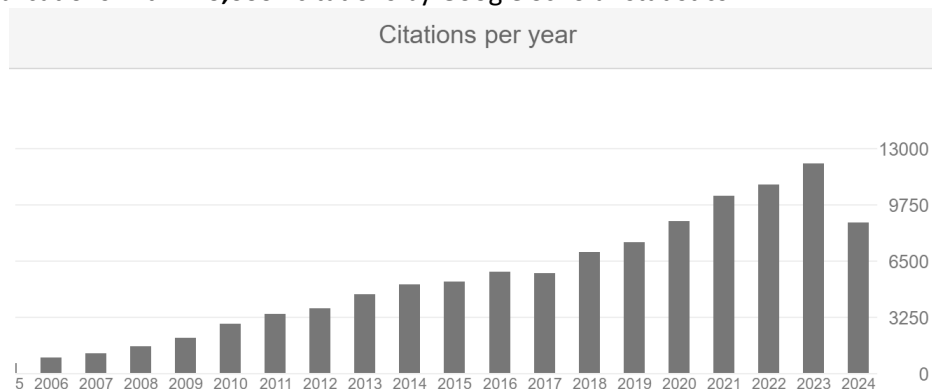
Journal Publications

[1]   W. Zhou and Z. Wang, "Perceptual Depth Quality Assessment of Stereoscopic Omnidirectional Images", *IEEE Transactions on Circuits and Systems for Video Technology*, accepted, to appear, 2024.

[2]   X. Liu, J. Yan, Z. Wan, Y. Fang and Z. Wang, "A quality-of-experience database for omnidirectional video streaming," *IEEE Journal of Selected Topics in Signal Processing*, vol. 17, no. 5, pp. 949-963, Sept. 2023.

[3]   H. Su, Q. Liu, Y. Liu, H. Yuan, H. Yang, Z. Pan and Z. Wang, "Bitstream-based Perceptual Quality Assessment of Compressed 3D Point Clouds," *IEEE Transactions on Image Processing*, vol. 32, pp. 1815-1828, 2023.

[4]   Q. Liu, H. Su, Z. Duanmu, W. Liu and Z. Wang, "Perceptual quality assessment of colored 3D point clouds," *IEEE Transactions on Visualization and Computer Graphics*, vol. 29, no. 8, pp. 3642-3655, Aug. 2023.

[5]   Z. Duanmu, W. Liu, D. Chen, Z. Li, Z. Wang, Y. Wang, and W. Gao, "A Bayesian quality-of-experience model for adaptive streaming videos," *ACM Transactions on Multimedia Computing Communications and Applications*, vol. 18, Issue 3s, pp. 1-24, Feb. 2023.

[6]   S. Athar and Z. Wang, "Degraded reference image quality assessment," *IEEE Transactions on Image Processing*, vol. 32, pp. 822-837, Jan. 2023.

[7]   Y. Wang, Z. Wang, Q. Hu, Y. Zhou and H. Su, "Hierarchical semantic risk minimization for large-scale classification," *IEEE Transactions on Cybernetics*, vol. 52, no. 9, pp. 9546-9558, Sep. 2022.

[8]   H. Yeganeh, K. Zeng and Z. Wang, "Understanding banding – Perceptual modeling and machine learning approaches for banding detection," *SMPTE Motion Imaging Journal*, vol. 131, no. 3, pp. 35-41, April. 2022.

[9]   X. Tang, F. Huang, C. Li, Z. Wang and D. Ban, "A survey on end-to-end point cloud learning," *Frontiers of Information Technology & Electronic Engineering*, vol. 19, no. 1, 2022.

[10]   Z. Duanmu, W. Liu, Z. Wang and Z. Wang, "Quantifying visual image quality: A Bayesian view," *Annual Review of Vision Science*, invited paper, Sep. 2021.

[11]   T. Zhao, Y. Lin, Y. Xu, W. Chen and Z. Wang, "Learning-based quality assessment for image super-resolution," *IEEE Transactions on Multimedia*, vol. 24, pp. 3570-3581, 2021.

[12]   Z. Duanmu, W. Liu, Z. Li and Z. Wang, "Modeling generalized rate-distortion functions," *IEEE Transactions on Image Processing*, vol. 29, pp. 7331-7344, 2020.

[13]   Z. Duanmu, W. Liu, Z. Li, K. Ma and Z. Wang, "Characterizing generated rate-distortion performance of video coding: An eigen analysis approach," *IEEE Transactions on Image Processing*, vol. 29, pp. 6180-6193, 2020.

[14]   K. Ma, Z. Duanmu, H. Zhu, Y. Fang and Z. Wang, "Deep guided learning for fast multi-exposure image fusion," *IEEE Transactions on Image Processing*, vol. 29, pp. 2808-2819, 2020.

[15]   Z. Wang, H. Yeganeh, K. Zeng and J. Wang, "Diagnosing visual quality impairments in high-dynamic-range/wide-color-gamut videos," *Journal of Digital Video*, vol. 5, no. 1, pp. 74-83, Dec. 2020.

[16]   K. Ma, Z. Duanmu, Z. Wang, Q. Wu, W. Liu, H. Yong, H. Li and L. Zhang, "Group maximum differentiation competition: model comparison with few samples," *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 42, no. 4, pp. 851-864, Apr. 2020.

[17]   L. Lin, S. Yu, L. Zhou, W. Chen, T. Zhao and Z. Wang, "PEA265: Perceptual assessment of video compression artifacts," *IEEE Transactions on Circuits and Systems for Video Technology*, early publication online Mar. 2020.

[18] W. Zhang, K. Ma, J. Yan, D. Deng, and Z. Wang, "Blind image quality assessment using a deep bilinear convolutional neural network," *IEEE Transactions on Circuits and Systems for Video Technology*, vol. 30, no. 1, pp. 36-47, Jan. 2020.

[19] Z. Wang, A. Rehman and K. Zeng, "Encoding intelligence for optimal viewer experience in live video distribution," *Journal of Digital Video*, vol. 4, no. 1, pp. 52-57, Dec. 2019.

[20] Y. Fang, H. Zhu, Z. Wang and S. Li, "Perceptual evaluation of multi-exposure image fusion of dynamic scenes," *IEEE Transactions on Image Processing*, vol. 29, pp. 1127-1138, Sept. 2019.

[21] S. Athar and Z. Wang, "A comprehensive performance evaluation of image quality assessment algorithms," *IEEE Access*, vol. 7, pp. 140030-140070, Sept. 2019.

[22] Z. Wang and A. Rehman, "Begin with the end in mind: a unified end-to-end quality-of-experience monitoring, optimization and management framework," *SMPTE Motion Imaging Journal*, Society of Motion Picture Technology and Engineering, vol. 128, no. 2, pp. 1-8, Mar. 2019.

[23] Z. Duanmu, K. Ma, and Z. Wang, "Quality-of-experience for adaptive streaming video: an expectation confirmation theory motivated approach," *IEEE Transactions on Image Processing*, vol. 27, no. 12, pp. 6135-6146, Dec. 2018

[24] K. Ma, H. Fu, T. Liu, Z. Wang, and D. Tao, "Deep blur mapping: exploiting high-level semantics by deep neural networks," *IEEE Transactions on Image Processing*, vol. 27, no. 10, pp. 5155-5166, Oct. 2018.

[25] Z. Duanmu, A. Rehman and Z. Wang, "A quality-of-experience database for adaptive video streaming," *IEEE Transactions on Broadcasting*, vol. 64, no. 2, pp. 474-487, Jun. 2018.

[26] K. Ma, W. Liu, K. Zhang, Z. Duanmu, Z. Wang, and W. Zuo, "End-to-end blind image quality assessment using deep neural networks," *IEEE Transactions on Image Processing*, vol. 27, no. 3, pp. 1202-1213, Mar. 2018.

[27] K. Ma, Z. Duanmu, H. Yeganeh, and Z. Wang, "Multi-exposure image fusion by optimizing a structural similarity index," *IEEE Transactions on Computational Imaging*, vol. 4, no. 1, pp. 60-72, Mar. 2018.

[28] S. Wang, K. Gu, K. Zeng, Z. Wang and W. Lin, "Objective quality assessment and perceptual compression of screen content images," feature article in *IEEE Computer Graphics and Applications*, vol. 38, no. 1, pp. 47-58, Jan.-Feb. 2018.

[29] X. Min, K. Ma, K. Gu, G. Zhai, Z. Wang and W. Lin, "Unified blind quality assessment of compressed natural, graphic and screen content images," *IEEE Transactions on Image Processing*, vol. 26, no. 11, pp. 5462-5474, Nov. 2017.

[30] Q. Wu, H. Li, Z. Wang, F. Meng, B. Luo, W. Li, and K. N. Ngan, "Blind image quality assessment based on rank-order regularized regression," *IEEE Transactions on Multimedia*, vol. 19, no. 11, pp. 2490-2504, Nov. 2017.

[31] S. Wang, A. Rehman, K. Zeng, J. Wang and Z. Wang, "SSIM-motivated two-pass VBR coding for high efficiency video coding," *IEEE Transactions on Circuits and Systems for Video Technology*, vol. 27, no. 10, pp. 2189-2203, Oct. 2017.

[32] K. Ma, W. Liu, T. Liu, Z. Wang, and D. Tao, "dipIQ: blind image quality assessment by learning-to-rank discriminable image pairs," *IEEE Transactions on Image Processing*, vol. 26, no. 8, pp. 3951-3964, Aug. 2017.

[33] K. Ma, H. Li, H. Yong, Z. Wang, D. Meng, L. Zhang, "Robust multi-exposure image fusion: A structural patch decomposition approach," *IEEE Transactions on Image Processing*, vol. 26, no. 5, pp. 2519-2532, May 2017.

[34] J. Wang, S. Wang, K. Ma and Z. Wang, "Perceptual depth quality in distorted stereoscopic images," *IEEE Transactions on Image Processing*, vol. 26, no. 3, pp. 1202-1215, Mar. 2017.

[35]   J. Wang, S. Wang and Z. Wang, "Asymmetrically compressed stereoscopic 3D videos: quality assessment and rate-distortion performance evaluation," *IEEE Transactions on Image Processing*, vol. 26, no. 3, pp. 1330-1343, Mar. 2017.

[36]   K. Ma, Z. Duanmu, Q. Wu, Z. Wang, H. Yong, H. Li, and L. Zhang, "Waterloo exploration database: new challenges for image quality assessment models," *IEEE Transactions on Image Processing*, vol. 26, no. 2, pp. 1004-1016, Feb. 2017.

[37]   Z. Duanmu, K. Zeng, K. Ma, A. Rehman, and Z. Wang "A quality-of-experience index for streaming video," *IEEE Journal of Selected Topics in Signal Processing*, vol. 11, no. 1, pp. 154-166, Feb. 2017.

[38]   T. Zhao, Z. Wang and C.-W. Chen, "Adaptive quantization parameter cascading in HEVC hierarchical coding," *IEEE Transactions on Image Processing*, vol. 25, no. 7, pp. 2997-3009, July 2016.

[39]   W. Zhang, A. Borji, Z. Wang, P. Le Callet, and H. Liu, "The application of visual saliency models in objective image quality assessment: A statistical evaluation," *IEEE Transactions on Neural Networks and Learning Systems*, vol. 27, no. 6, pp. 1266-1278, June 2016.

[40]   F. Manji, J. Wang, G. Norman, Z. Wang and D. Koff, "Comparison of dual energy subtraction chest radiography and traditional chest X-rays in the detection of pulmonary nodules", *Quantitative Image in Medicine and Surgery*, vol. 6, no. 1, pp. 1-5, Feb. 2016.

[41]   K. Ma, T. Zhao, K. Zeng and Z. Wang, "Objective quality assessment for color-to-gray image conversion," *IEEE Transactions on Image Processing*, vol. 24, no. 12, pp. 4673 – 4685, Dec. 2015.

[42]   S. Wang, K. Ma, H. Yeganeh, Z. Wang and W. Lin, "A patch structure representation method for quality assessment of contrast changed images," *IEEE Signal Processing Letters*, vol. 22, no. 12, pp. 2387-2390, Dec. 2015.

[43]   H. Yeganeh, M. Rostami and Z. Wang, "Objective quality assessment of interpolated natural images," *IEEE Transactions on Image Processing*, vol. 24, no. 11, pp. 4651-4663, Nov. 2015.

[44]   J. Wang, A. Rehman, K. Zeng, S. Wang and Z. Wang, "Quality prediction of asymmetrically distorted stereoscopic 3D images," *IEEE Transactions on Image Processing*, vol. 24, no. 11, pp. 3400-3414, Nov. 2015.

[45]   K. Ma, K. Zeng and Z. Wang, "Perceptual quality assessment for multi-exposure image fusion," *IEEE Transactions on Image Processing*, vol. 24, no. 11, pp. 3345-3356, Nov. 2015.

[46]   K. Ma, H. Yeganeh, K. Zeng and Z. Wang, "High dynamic range image compression by optimizing tone mapped image quality index," *IEEE Transactions on Image Processing*, vol. 24, no. 10, pp. 3086-3097, Oct. 2015.

[47]   R. Hassen, Z. Wang and M. Salama, "Objective quality assessment for multi-exposure multi-focus image fusion," *IEEE Transactions on Image Processing*, vol. 24, no. 9, pp. 2712-2714, Sep. 2015.

[48]   Y. Fang, K. Ma, Z. Wang, W. Lin, Z. Fang and G. Zhai, "No-reference quality assessment of contrast-distorted images based on natural scene statistics," *IEEE Signal Processing Letters*, vol. 22, no. 7, pp. 838-842, Jul. 2015.

[49]   T. Zhao, J. Wang, Z. Wang and C.-W. Chen, "SSIM-based coarse-grain scalable video coding," *IEEE Transactions on Broadcasting*, vol. 61, no. 2, pp. 210-221, Jun. 2015.

[50]   M. Rostami, O. Michailovich and Z. Wang, "Surface reconstruction in gradient-field domain using compressed sensing," *IEEE Transactions on Image Processing*, vol. 24, no. 5, pp. 1628-1638, May 2015.

[51]   D. Z. Rodriguez, Z. Wang, R. L. Rosa and G. Bressan, "The Impact of Video-Quality-Level Switching on User Quality-of-Experience in Dynamic Adaptive Streaming over HTTP," *EURASIP Journal on Wireless Communications and Networking*, no. 216, Dec. 2014.

[52] Y. Fang, Z. Wang, W. Lin, and Z. Fang, "Video saliency incorporating spatiotemoral cues and uncertainty weighting," *IEEE Transactions on Image Processing*, vol. 23, no. 9, pp. 3910-3921, Sept. 2014.

[53] Y. Fang, K. Zeng, Z. Wang, W. Lin, Z. Fang, and C.-W. Lin, "Objective quality assessment for image retargeting based on structural similarity," *IEEE Journal on Emerging & Selected Topics in Circuits and Systems*, special issue on *Content-Aware Visual Systems: Analysis Streaming and Retargeting*, vol. 4, no. 1, pp. 95-105, Mar. 2014.

[54] T. Zhao, Z. Wang and S. Kwong, "Flexible mode selection and complexity allocation in high efficiency video coding," *IEEE Journal of Selected Topics in Signal Processing*, special issue on *Video Coding: HEVC and Beyond*, vol. 7, no. 6, pp.1135-1144, Dec. 2013.

[55] A. Rehman, Y. Gao, J. Wang and Z. Wang, "Image classification based on complex wavelet structural similarity," *Signal Processing: Image Communication*, special issue on *Biologically Inspired Approaches for Visual Information Processing and Analysis*, vol. 28, no. 8, pp. 984-992, Sep. 2013.

[56] R. Hassen, Z. Wang and M. Salama, "Image sharpness assessment based on local phase coherence," *IEEE Transactions on Image Processing*, vol. 22, no. 7, pp. 2798-2810, July 2013.

[57] N. Nikvand and Z. Wang, "Image distortion analysis based on normalized perceptual information distance", *Signal, Image and Video Processing*, special issue on *Human Vision and Information Theory*, vol. 7, no. 3, pp. 403-410, May 2013.

[58] S. Wang, A. Rehman, Z. Wang, S. Ma and W. Gao, "Perceptual video coding based on SSIM-inspired divisive normalization," *IEEE Transactions on Image Processing*, vol. 22, no. 4, pp. 1418-1429, Apr. 2013.

[59] T. Zhao, S. Kwong, H. Wang, Z. Wang, Z. Pan and J. Kuo, "Multiview coding mode decision with hybrid optimal stopping model," *IEEE Transactions on Image Processing*, vol. 22, no. 4, pp. 1598-1609, Apr. 2013.

[60] H. Yeganeh and Z. Wang, "Objective quality assessment of tone mapped images," *IEEE Transactions on Image Processing*, vol. 22, no. 2, pp. 657-667, Feb. 2013.

[61] D. Brunet, J. Vass, E. R. Vrscay and Z. Wang, "Geodesics of the structural similarity index," *Applied Mathematics Letters*, vol. 25, no. 11, pp. 1915-1921, Nov. 2012.

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