1/9/2026

CURRICULUM VITAE
PROFESSOR ALAN CONRAD BOVIK

Photographs courtesy of Harry Borden, HonFRPS

Website: https://www.ece.utexas.edu/people/faculty/alan-bovik

Biographical Sketch

Professor Al Bovik (HonFRPS) was born in Kirkwood, MO on June 25, 1958. He received the B.S. degree in Computer Engineering in 1980 and the M.S. and Ph.D. degrees in Electrical and Computer Engineering in 1982 and 1984, all from the University of Illinois, Urbana-Champaign.

He holds the Provost's Chair in Engineering at the University of Colorado Boulder. He is also the Cockrell Family Regents Chair Emeritus in Engineering at The University of Texas at Austin, where he taught and conducted research for 41 years. He is the Director of Colorado's Laboratory for Image and Video Engineering (LIVE). During the Spring of 1992, he held a visiting position in the Division of Applied Sciences, Harvard University, Cambridge, Massachusetts.

He is well known as the inventor or co-inventor of Order Statistic Filters; the Gabor Texture Model; the Image Modulation Model; the Structural Similarity (SSIM), Visual Information Fidelity (VIF), MOVIE, VMAF, and FUNQUE full-reference visual quality prediction models, the BRISQUE, BLIINDS, NIQE, and ChipQA blind visual quality models, and the HDRMAX video quality add-on model for HDR streaming, all of which are used in global streaming, broadcast, disc, and social media workflows and/or marketed worldwide; the LIVE Image and Video Quality Databases (downloaded thousands of times); and SIVA - the Signal, Image and Video Audiovisual Demonstration Gallery (used by more than 1000 sites around the world), as well as many other

contributions to the fields of digital television, image and video processing, computational vision, and modeling of visual perception.

Professor Bovik has frequently been interviewed, featured, or quoted in the media including on *KXAN TV, The Wall Street Journal, Building the Future* (radio podcast), *The Hollywood Reporter, BBC Science* (radio podcast), *RPS Journal, Deadline, Source Decode* (radio podcast), *TV Technology, Light Reading, Austin American-Statesman, Emmy Magazine,* and *Sound and Picture.* He has published more than 1000 technical articles and U.S. patents in these areas. His publications have been cited more than 200,000 times in the literature, his current H-index is above 140, and he is listed as a **Highly-Cited Researcher** by the Web of Science, indicating one of the top 1% of most-cited researchers within the field of Engineering. He is the author of the widely-adopted *The Handbook of Image and Video Processing,* Second Edition (Elsevier Academic Press, 2005), *Modern Image Quality Assessment* (Morgan & Claypool, 2006), and *The Essential Guides to Image* and *Video Processing* (Elsevier Academic Press, 2009).

Dr. Bovik was named the recipient of the **John Fritz Medal** in 2024. Among the oldest and esteemed awards in all of engineering, given since 1902, and often described as the Nobel Prize for engineering. Citation: *For foundational contributions to the theoretical and engineering aspects of perceptual picture and video quality prediction, leading to systems that ensure optimized visual quality for hundreds of millions of viewers daily.* He was also the recipient of the **IEEE Edison Medal** for 2022**.** This major honor, given since 1909, is the oldest award given by the IEEE and is regarded as its highest honor for invention and technical accomplishments. Citation: *For pioneering high-impact scientific and engineering contributions leading to the perceptually optimized global streaming and sharing of visual media.* He received Television's highest honor, an individual **Primetime Emmy® Award for Outstanding Achievement in Engineering Development** from the Academy of Television Arts and Sciences (The Television Academy) in October 2015, for his work on the development of video quality prediction models that have become standard tools in broadcast and post-production houses throughout the television industry. He received a **Technology and Engineering Emmy® Award** from the National Academy of Television Arts and Sciences. Citation: *For the Development of Perceptual Metrics for Video Encoding Optimization,* in October 2021. He received a **BaM ("Bammy") Award®** from IABM in December 2022, for *Perceptual picture quality algorithms and databases for streaming and social media*. He received the **Progress Medal** from The Royal Photographic Society in November 2019, which is awarded in recognition of any invention, research, publication or other contribution which has resulted in an important advance in the scientific or technological development of photography or imaging in the widest sense. This award has been given continuously since 1878. He received the **2019 IEEE Fourier Award** *For seminal contributions and high-impact innovations to the theory and application of perception-based image and video processing.* He was also the recipient of the **2017 Edwin H. Land Medal** from The Optical Society and the Society for Imaging Science and Technology. Citation: *For substantially shaping the direction and advancement of modern perceptual picture quality theory, and for energetically engaging industry to transform his ideas into global practice.* He received the **IEEE Third Millennium Medal** in 2000.

He has also received all of the major awards from the IEEE Signal Processing Society, including: the **Norbert Wiener Society Award** (2013); the **Claude Shannon/Harry Nyquist Technical Achievement Award** (2005); the **Best Paper Award** (2009); the **Signal Processing Magazine Best Paper Award** (2013); the **Karl Friedrich Gauss Education Award** (2007); the **Distinguished Lecturer Award** (2000); the **Leo L. Beranek Meritorious Service Award** (1998); the **ICIP Pioneer Award** (2019); the **Sustained Impact Paper Award** (2017); the **Signal Processing**

Letters Best Paper Award (2017); and (co-author) the **Young Author Best Paper Award** (2013).

He is the author of two **2017 Google Scholar Classic Papers** recognizing highly-cited papers that have stood the test of time, and are among the ten most-cited articles in their area of research published ten years earlier. He also received the **EURASIP Best Paper Award** (2018, 2020), the **Picture Coding Symposium Best Paper Award** (2018), and the **IEEE Circuits and Systems for Video Technology Best Paper Award** (2016). He was named recipient of the **Honorary Member Award** of the Society for Imaging Science and Technology for 2013, received the **SPIE Technology Achievement Award** for 2012, and was the **IS&T/SPIE Imaging Scientist of the Year** for 2011.

He is a recipient of The University of Texas at Austin Department of ECE **Gordon Lepley Teaching Award** (2022), The University of Texas at Austin **Career Research Excellence Award** (2020), the **Joe J. King Professional Engineering Achievement Award** (2015) and the **Hocott Award for Distinguished Engineering Research** (2008), both from the Cockrell School of Engineering at The University of Texas at Austin, the **Distinguished Alumni Award** from the University of Illinois at Champaign-Urbana (2008).

Professor Bovik is the Director of the Amazon Science Hub at The University of Texas at Austin. He is an elected member of the **United States National Academy of Engineering,** an elected Fellow of the **Indian National Academy of Engineering,** an elected Fellow of the **United States National Academy of Inventors**, an elected member of **Academia Europaea,** and a member of both **The Television Academy** (ATAS) and the **National Academy of Television Arts and Sciences** (NATAS). He was also named an **Honorary Fellow** (HonFRPS) of the Royal Photographic Society. He is a Life Fellow of the IEEE, a Fellow of the Optical Society of America (OSA), a Fellow of the Society of Photo-Optical and Instrumentation Engineers (SPIE), a Fellow of the Asia-Pacific Artificial Intelligence Association (AAIA), is a member of the Society of Motion Picture and Television Engineers (SMPTE), and the Internet Society. He is an inaugural member of the Science and Technology Peer Group of The Television Academy. He is a member of the The Academy of Medicine, Engineering and Science of Texas (TAMEST).

He has been involved in numerous professional society activities, including: Board of Governors, IEEE Signal Processing Society, 1996-1998; Editor-in-Chief, *IEEE Transactions on Image Processing,* 1996-2002; Editorial Board, *The Proceedings of the IEEE,* 1998-2004; Senior Editorial Board, *IEEE Journal on Special Topics in Signal Processing*, 2005-2009; and Founding General Chair, *First IEEE International Conference on Image Processing,* held in Austin, Texas, in November, 1994. Dr. Bovik is also a busy and much sought-after consultant to industry. He is also an active member of and financial contributor to many charitable organizations, including the Shanti Bhavan Children's Project (https://tinyurl.com/9crhhycm), the National Wildlife Federation (https://www.nwf.org/), St. Jude's Children's Research Hospital (https://tinyurl.com/2tmas542), the National Park Foundation https://tinyurl.com/3nk5tpy8), the Rocky Mountain Conservancy (https://rmconservancy.org/), the Nature Conservancy (https://tinyurl.com/mr4x3486), and the Colorado Fine Arts Association (https://coloradofinearts.org/).

Laboratory for Image and Video Engineering

Al Bovik has been the Director of the Laboratory for Image and Video Engineering (LIVE) for the past 42 years, first at The University of Texas at Austin (1984-2025) and now at University of Colorado Boulder. His mission remains the same: to guide education and research in the dynamic and impactful space of perceptual image and video processing, communication, and understanding. The work done by he and his students stands at the nexus of visual neuroscience, psychophysics, image and video processing theory, and deep learning. The outcomes of the work done in LIVE

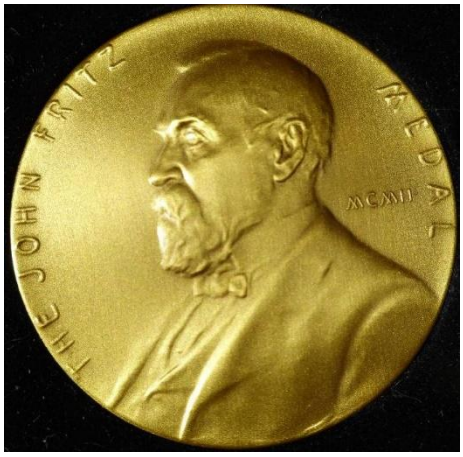
impact hundreds of millions of people daily, improving the visual experiences of viewers of broadcast television, streaming and social media, photographs, remote learning, teleconferencing and more, beneficially and significantly reducing global internet bandwidth consumption, and by extension the carbon footprint of the internet. His nearly 80 graduated PhD students have among them won six Emmy® awards and ten best paper awards from leading journals, and have gone on to illustrious careers in academy (18 professors around the world) and industry. LIVE is supported by and continuously engages with leading industries in these fields, including long-term support from YouTube, Meta Platforms, Netflix, Amazon Prime Video, Sony Interactive Entertainment, and Ericsson Electronics, and in the past from Cisco Systems, Intel, National Instruments, Texas Instruments, and many other picture- and video-related companies.

Professor Bovik's research program supports not only his graduate research and educational programs, but also his classroom teaching. Since 1991 he has taught *Digital Image Processing,* an advanced upper-division undergraduate class, since 2014 he has taught *Digital Video,* an advanced graduate course. These courses are unique in their composition, heavily emphasizing practical mathematical principles of visual neuroscience that guide modern pictuire and video processing theory and practice, and hands-on development of deep learning and neuroscience based algorithms for picture and video analysis, enhancement, compression, quality prediction, segmentation, denoising and restoration, and much more. Each class benefits by Professor Bovik's award-winning image and video processing courseware, whereby the students are exposed to hundreds of livce examples of image and video processing algorithms in action, operating under different parameters settings and for diverse scenarios.

Word Cloud

This image is a Word Cloud formed from the titles of the journal papers in this document, roughly illustrating the topical frequency of Professor Bovik's research work:

Honors and Awards



Latest Google Scholar Summary

	All	Since 2020
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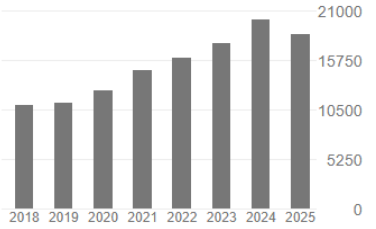
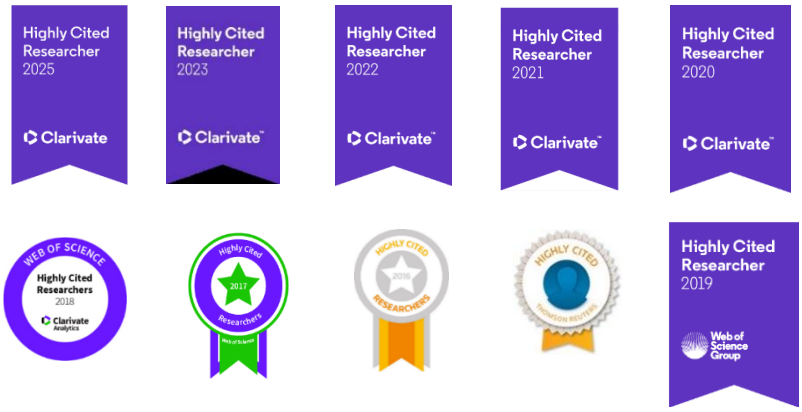
h-index	142	89
i10-index	623	341





Honors and Awards

1. Elected to Honor Society of Phi Kappa Phi, 1981.
2. Stark Centennial Endowed Fellow in Engineering, University of Texas, Austin, 1987-1991.
3. Listed in *Men of Achievement,* 1988.
4. Honorable Mention, Thirteenth Annual Pattern Recognition Society Award for the paper "Nonparametric tests for edge detection in noise," *Pattern Recognition* (1988).
5. Registered Professional Engineer in the State of Texas (License # 114706).
6. Elevated to Senior Member of the IEEE, November 1989.
7. Supervised PhD Dissertation "On Using Chromatic Information in Stereo Correspondence" (John R. Jordan III), selected winner of the University of Texas all-campus Outstanding Dissertation Award, 1990.
8. Supervised winner of 1990 MCC Awards for Excellence in Computer Science and Electrical & Computer Engineering student paper award winner for the paper (Dapang Chen and A.C. Bovik) "Visual Pattern Image Coding," *IEEE Transactions on Communications,* vol. COM-38, no. 12, December 1990.
9. National Finalist, 1990 Eta Kappa Nu Outstanding Young Electrical Engineer Award. There were 7 Finalists in this U.S. competition.
10. William H. Hartwig Endowed Fellow in Engineering, The University of Texas at Austin, 1991-present.
11. Recipient of University of Texas **Engineering Foundation Faculty Excellence Award,** 1991.
12. Associate Director, Center for Vision and Image Sciences, The University of Texas at Austin, 1994-2000.
13. Honorable Mention, Nineteenth Annual Pattern Recognition Society Award for the paper "Using Chromatic Information in Dense Stereo Correspondence," *Pattern Recognition,* 1993.
14. Elected **Fellow of the Institute of Electrical and Electronics Engineers (IEEE)** *"For Contributions to Nonlinear Image Processing,"* December 1995.
15. General Dynamics Endowed Fellow in Engineering, The University of Texas at Austin, 1996-2000.
16. Recipient of the IEEE Signal Processing Society **1998 Leo L. Beranek Meritorious Service Award Meritorious Service Award** in 1998. This is the highest service honor given by the Society. Citation: *"For Broad and Extensive Service Contributions to the Society, and in Particular for the Creation of the IEEE International Conference on Image Processing*."

17. Recipient of the **IEEE Third Millennium Medal**, 2000.
18. Recipient of the **IEEE Signal Processing Distinguished Lecturer Award** in 2000.
19. Named Robert Parker, Sr. Centennial Professor in Engineering, The University of Texas at Austin, September 2000-August 2003.
20. Named a Dean's Fellow in the College of Engineering in the Year 2002.
21. Named The Cullen Trust for Higher Education Endowed Professor, The University of Texas at Austin, September 2003-August 2005.
22. Named the **Keys and Joan Curry/Cullen Trust Endowed Chair in Engineering**, The University of Texas at Austin, September 2005-2014.
23. Recipient of the IEEE Signal Processing Society **Claude Shannon / Harry Nyquist Technical Achievement Award**, 2005. This is the highest technical honor given by the Society. Citation: *"For Broad and Lasting Contributions to the Field of Digital Image Processing."*
24. Elected **Fellow of the Optical Society of America**, *"For fundamental research contributions to and technical leadership in digital image and video processing*," November 2006.
25. Recipient of the IEEE Signal Processing Society **Karl Friedrich Gauss Education Award** in 2008. This is the highest education honor given by the Society. Citation: *"For Broad and Lasting Contributions to Image Processing, including popular and important image processing books, innovative on-line courseware, and for the creation of the leading research and educational journal and conference in the image processing field.*"
26. Elected **Fellow of the Society of Photo-Optical and Instrumentation Engineers (SPIE)** *"For pioneering technical, leadership, and educational contributions to the field of image processing,"* December 2007.
27. Recipient of the **Distinguished Alumni Award of the University of Illinois**, Champaign-Urbana "*For fundamental and enduring technical, educational and service contributions to the field of digital image and video processing*," September 2008.
28. Recipient of the **Billy and Claude R. Hocott Award** for Distinguished Engineering Research, The University of Texas at Austin. This is the highest engineering research award given annually to one member of the faculty of the Cockrell School of Engineering, October 2008.
29. Panelist, "Tools, Targets and Trends," *First International Workshop on Quality of Multimedia Experience,* San Diego, California, July 30, 2009.
30. Winner, **IEEE Signal Processing Society Best Paper Award** for 2009, for the paper "Image Quality Assessment: From Error Visibility to Structural Similarity," published in the *IEEE Transactions on Image Processing,* volume 13, number 4, pages 600-612, April 2004. This is the highest paper award given by the Society, and is retrospective over the five years leading up to the award.
31. Elected **Fellow of the American Institute for Medical and Biological Engineering** (AIMBE), October 2010.
32. Recipient of the **IS&T / SPIE Imaging Scientist of the Year Award**, 2011. This is the highest technical honor collaboratively given by these two Societies. Citation: *"For his seminal contributions to the computational aspects of biological visual perception, specifically in the areas of image and video quality."*
33. Recipient of the **SPIE Technology Achievement Award**, 2012. This is the highest technical honor given by the 17,000 member Society for Photo-Optical and Instrumentation Engineers. Citation: "*For Broad and Lasting Contributions to the Field of Perception-Based Image Processing*."

34. Recipient of the **Honorary Member Award** of the Society for Imaging Science and Technology, 2014. This is the highest award of any kind given by IS&T. Citation: *"For his impact in shaping the direction and advancement of the field of perceptual image processing."*
35. Recipient of the **Norbert Wiener Society Award of the IEEE Signal Processing Society**, 2013. This is the highest award of any kind given by the IEEE SPS. Citation: *"For fundamental contributions to digital image processing theory, technology, leadership and education."*
36. Recipient of the **IEEE Signal Processing Magazine Best Paper Award** of the IEEE Signal Processing Society for 2013, for the paper "Mean Squared Error: Love it or Leave it? — A New Look at Signal Fidelity Measures," *IEEE Signal Processing Magazine,* vol. 26, no. 1, pp. 98-117, January 2009. This is the highest survey paper award given by the Society, and is retrospective over the five years leading up to the award.
37. Co-author of the **IEEE Signal Processing Society Young Author Best Paper Award** (with K. Seshadrinathan) for 2013, for the paper "Motion Tuned Spatio-Temporal Quality Assessment of Natural Videos," *IEEE Transactions on Image Processing,* vol. 19, no. 2, pp. 335-350, February 2010. This is the highest young author paper award given by the Society, and is retrospective over the five years leading up to the award.
38. **Highly-Cited Researcher for 2014**, according to Thompson Reuters, indicating one of the top 1% of most-cited researchers within the field of Engineering, August 2014.
39. Named Holder of the **Ernest J. Cockrell Endowed Chair in Engineering (#3)**, The University of Texas at Austin, September 2014-present.
40. Recipient of the **ICIP Top 10% Paper Award** for the paper "Assessment of Video Quality Using Time-Frequency Statistics," presented at the *IEEE International Conference on Image Processing,* Paris, France, October 27-30, 2014 (with A. Mittal and M. Saad).
41. Recipient of the **Joe J. King Professional Engineering Achievement Award**, The University of Texas at Austin. This is the highest engineering award honoring professional achievement and leadership given annually to one member of the faculty of the Cockrell School of Engineering, September 2015.
42. Recipient of Television's highest honor, an individual **Primetime Emmy® Award for Outstanding Achievement in Engineering Development** from the Academy of Television Arts and Sciences in October 2015, for the invention of "Structural Similarity (SSIM) Video Quality Measurement." The award recognizes his work on the development of video quality prediction models which have become standard tools in broadcast and post-production houses throughout the television industry. A Primetime Emmy® Award is Television's highest honor. An Engineering Emmy® Award is bestowed upon an individual, company or organization for developments in engineering that are either so extensive an improvement on existing methods, or so innovative in nature, that they materially affect the transmission, recording or reception of television.
43. **Highly-Cited Researcher for 2015**, according to Thompson Reuters, indicating one of the top 1% of most-cited researchers within the field of Engineering.
44. Recipient of the **IEEE Circuits and Systems for Video Technology Best Paper Award** of the IEEE Circuits and Systems Society for 2016, for the paper "Video Quality Assessment by Reduced Reference Spatio-Temporal Entropic Differencing," *IEEE Transactions on Circuits and Systems for Video Technology,* vol. 23, no. 4, pp. 684 – 694, April 2013. Retrospective over the three years leading up to the award.
45. **Highly-Cited Researcher for 2016**, according to Thompson Reuters, indicating one of the top 1% of most-cited researchers within the field of Engineering.

46. Recipient of the **IEEE Signal Processing Society Sustained Impact Paper Award for 2017**, for the paper "Image Quality Assessment: From Error Visibility to Structural Similarity," published in the *IEEE Transactions on Image Processing,* volume 13, number 4, pages 600-612, April 2004. This award is required to be limited to papers published in an IEEE Signal Processing Society journal at least ten years prior to the award, thereby recognizing sustained impact over many years on a subject related to the Society's technical scope. Notably, this is the most-cited paper ever published in any IEEE Signal Processing Society transactions, journal, magazine, express letters, or conference proceedings.
47. Recipient of the **Edwin H. Land Medal** for 2017 from The Optical Society and the Society for Imaging Science and Technology. Citation: *For substantially shaping the direction and advancement of modern perceptual picture quality theory, and for energetically engaging industry to transform his ideas into global practice.*
48. **2017 Google Scholar Classic Paper Award** (for Computer Vision and Pattern Recognition): "Image information and visual quality," *IEEE Transactions on Image Processing,* vol. 15, no. 2, pp. 430-444, February 2006. Google Scholar Classic Papers are highly-cited papers that have stood the test of time, and are among the ten most-cited articles in their area of research published ten years earlier. The main algorithm developed in the paper, called the Visual Information Fidelity (VIF) Index, is a core picture quality prediction engine used to quality-assess all encodes streamed globally by Netflix.
49. **2017 Google Scholar Classic Paper Award** (for Signal Processing): "An evaluation of recent full reference image quality assessment algorithms," *IEEE Transactions on Image Processing,* vol. 15, no. 11, pp. 3440-3451, November 2006. Google Scholar Classic Papers are highly-cited papers that have stood the test of time, and are among the ten most-cited articles in their area of research published ten years earlier. The picture quality database and human study described in the paper, the LIVE Image Quality Database, has been the standard development tool for picture quality research since its first introduction in 2003.
50. **Highly-Cited Researcher for 2017**, according to Clarivate Analytics, indicating one of the top 1% of most-cited researchers within the field of Engineering.
51. Recipient of the **IEEE Signal Processing Letters Best Paper Award** of the IEEE Signal Processing Society for 2018, for the paper "Making a 'Completely Blind' Image Quality Analyzer," *IEEE Signal Processing Letters,* vol. 21, no. 3, pp. 209-212, March 2013. This 'high-impact' Letters paper award is retrospective over the five years leading up to the award.
52. Recipient of the **EURASIP Best Paper Award** of the European Association for Signal Processing for 2018, for the paper "Full-Reference Quality Assessment of Stereopairs Accounting for Rivalry," *Signal Processing: Image Communication,* vol. 28, no. 10, pp. 1143-1155, October 2013. Retrospective over the five years leading up to the award.
53. Recipient of the **Best Paper Award** of the *Picture Coding Symposium* for the paper, "Detecting Source Video Artifacts with Supervised Sparse Filters," June 2018.
54. Recipient of the **IEEE Fourier Award for Signal Processing** for 2019. This major honor is an IEEE-level Technical Field Award. Citation: *For seminal contributions and high-impact innovations to the theory and application of perception-based image and video processing.*
55. **Highly-Cited Researcher for 2018**, according to Clarivate Analytics, indicating one of the top 1% of most-cited researchers within the field of Engineering.
56. Recipient of the **Progress Medal** for 2019 from The Royal Photographic Society. The Progress Medal is awarded in recognition of any invention, research, publication or other contribution which has resulted in an important advance in the scientific or technological development of

photography or imaging in the widest sense. This award has been given continuously since 1878.

57. Named **Honorary Fellow** of The Royal Photographic Society, 2019.
58. Recipient of the **ICIP Pioneer Award** (2019). Citation: *For unparalleled leadership and contributions to the image processing community.*
59. **Highly-Cited Researcher for 2019**, according to the Web of Science Group, indicating one of the top 1% of most-cited researchers within the field of Engineering.
60. Recipient of the **EURASIP Best Paper Award** of the European Association for Signal Processing for 2020, for the paper "Blind image quality assessment by relative gradient statistics and adaboosting neural network," *Signal Processing: Image Communication,* vol. 40, no. 10, pp. 1-15, January 2016. Retrospective over the five years leading up to the award.
61. Recipient of **The University of Texas at Austin Career Research Excellence Award** for 2020, acknowledging a faculty member or staff researcher who has maintained superior research programs over many years. The award is given annually to a single individual from amongst more than 3000 faculty and research staff.
62. **Highly-Cited Researcher for 2020**, according to the Web of Science Group, indicating one of the top 1% of most-cited researchers within the field of Engineering.
63. Recipient of Television's highest honor, an individual **Technology and Engineering Emmy® Award** from the National Academy of Television Arts and Sciences for the "Development of Perceptual Metrics for Video Encoding Optimization" in October 2021. A Technology and Engineering Emmy® Award is bestowed upon an individual, company or organization for developments in engineering that are either so extensive an improvement on existing methods, or so innovative in nature, that they materially affect the transmission, recording or reception of television.
64. **YouTube Top 10 Best Paper Award** for the paper "Assessment of Subjective and Objective Quality of Live Streaming Sports Videos," presented at the *IEEE Picture Coding Symposium,* 2021.
65. **Highly-Cited Researcher for 2021**, according to the Web of Science Group, indicating one of the top 1% of most-cited researchers within the field of Engineering.
66. **Recipient of the IEEE Edison Medal for 2022,** "for a career of meritorious achievement in electrical science, electrical engineering, or the electrical arts." It is the highest honor for invention and technical accomplishments in these fields, and the oldest and most coveted medal in this field of engineering. Citation: *For pioneering high-impact scientific and engineering contributions leading to the perceptually optimized global streaming and sharing of visual media.*
67. **Elected as a member of the United States National Academy of Engineering** in February 2022. Election to National Academy of Engineering membership is one of the highest professional honors accorded an engineer.
68. Named as a member of **The Academy of Medicine, Engineering and Science of Texas** (TAMEST), 2022.
69. Recipient of the **2022 Gordon Lepley Teaching Award** in the Department of Electrical and Computer Engineering at The University of Texas at Austin. The award recognizes educators "Who relate to each student and who can grow in their teaching skills, ultimately inspiring the majority to learn."
70. **Highly-Cited Researcher for 2022**, according to the Web of Science Group, indicating one of the top 1% of most-cited researchers within the field of Engineering.

71. Elected as a **Fellow of the United States National Academy of Inventors** in November 2022. Academy members can only be elected if they "have demonstrated a highly prolific spirit of innovation in creating or facilitating outstanding inventions that have made a tangible impact on the quality of life, economic development, and welfare of society."
72. Recipient of **BaM ("Bammy") Award®** from the International Trade Association for Broadcast & Media Technology, in December 2022, for *Perceptual picture quality algorithms and databases for streaming and social media.* BaM Awards® are given to "any product that is recognized by the judging panel is not just an innovative solution but is genuinely important to the market and sets the standard in its category."
73. Named as the **Director of the Amazon Science Hub** at The University of Texas at Austin in April 2023. This industry-university center intends to create and maintain research collaborations between leading academic research groups at the university and key business units at Amazon, towards solving real world problems of interest to Amazon, while providing world-class research problems for faculty and PhD students.
74. **Elected as a member of Academia Europaea** (the Academy of Europe) in May 2023. Election to the Academy is one of the highest professional honors accorded an engineer whose work has impacted European technology and industry.
75. Named Holder of the **Cockrell Family Dean's Chair for Engineering Excellence,** The University of Texas at Austin, September 2023 – present.
76. **Elected as a Fellow of the Indian National Academy of Engineering** in November 2023. The Indian Academy, founded in 1987, comprises India's most distinguished engineers, engineer-scientists and technologists covering the entire spectrum of engineering disciplines. It is the highest professional honor accorded an engineer whose work has impacted Indian technology, industry, and society.
77. **Elevated to Life Fellow of the IEEE** in September 2023. IEEE Life Membership is bestowed upon an active IEEE member who is also an IEEE Fellow and: Has attained the age of 65 years, and been a member of IEEE for such a period that the sum of their age and their years of membership equals or exceeds 100 years.
78. **Highly-Cited Researcher for 2023**, according to Thompson Reuters, indicating one of the top 1% of most-cited researchers within the field of Engineering, November 2023.
79. **Elevated to Fellow** of the Asia-Pacific Artificial Intelligence Association (AAIA), January 2024.
80. **Recipient of the John Fritz Medal** in 2024. Among the oldest and esteemed awards in all of engineering, given since 1902, and often described as the Nobel Prize for engineering. Citation: *For foundational contributions to the theoretical and engineering aspects of perceptual picture and video quality prediction, leading to systems that ensure optimized visual quality for hundreds of millions of viewers daily.*
81. **Highly-Cited Researcher for 2025**, according to Clarivate, indicating one of the top 1% of most-cited researchers within the field of Engineering, November 2025.
82. Named the **Cockrell Family Regents Chair Emeritus in Engineering** at The University of Texas at Austin, December 2025.

Plenary and Keynote Talks

1. **Plenary Speaker,** *International Conference on Multimedia Processing and Systems,* Madras, India, August 14, 2000.

2. **Plenary Address,** *IEEE Southwest Symposium on Image Analysis and Interpretation,* Lake Tahoe, Nevada, March 28-30, 2004.
3. **Plenary Address,** *National Instruments NI Week,* Austin, Texas, June 2004.
4. **Keynote Address,** *Twelfth Annual Worldwide Virtual Instrumentation Conference and Exhibition***,** Austin Convention Center, Austin, Texas**,** August 2006.
5. **Keynote Address,** *SPIE Human Vision and Electronic Imaging Conference,* San Jose, California, January 29, 2007.
6. **Plenary Address,** *IEEE Signal Processing Society International Workshop on Multimedia Signal Processing,* Chania, Crete, Greece, October 2007.
7. **Plenary Address,** *Texas Wireless Symposium,* Austin, Texas, October 2007.
8. **Plenary Address,** *IEEE Southwest Symposium on Image Analysis and Interpretation,* Santa Fe, New Mexico, March 2008.
9. **Plenary Address,** *IEEE Region 10 Conference*, Hyderabad, India, November 2008.
10. **Plenary Address,** *First IEEE International Workshop on IP Multimedia Communications,* Virgin Islands, USA, August 4, 2008.
11. **Plenary Address,** *IEEE International Conference on Image Processing,* San Diego, California, October 2008.
12. **Plenary Address,** *IEEE Southwest Symposium on Image Analysis and Interpretation,* Austin, Texas, May 2010.
13. **Plenary Address,** *Optical Society of America Topical Meeting on Digital Image Processing and Analysis* (*DIPA*)*,* Tucson, AZ, June 2010.
14. **Keynote Address,** *National Instruments NI Week Vision Summit,* August 2010.
15. **Plenary Address,** *IS&T / SPIE Electronic Imaging Symposium,* San Francisco, California, January 2011.
16. **Keynote Address,** *European Workshop on Visual Information Processing,* Paris, July 2011.
17. **Keynote Address,** *IEEE Southwest Symposium on Image Analysis and Interpretation,* Santa Fe, New Mexico, April 2012.
18. **Plenary Address,** *Optical Society of America Meeting on Computational Optical Sensing and Imaging,* Monterrey, California, June 25, 2012.
19. **Plenary Address,** *Workshop on Digital Video Analytics and Processing,* IIT-Chennai, Chennai, India, December 2012.
20. **Keynote Address,** *International Workshop on Video Processing and Quality Metrics for Consumer Electronics,* Scottsdale, Arizona, January 30, 2013.
21. **Keynote Address,** *IEEE Signal Processing Society Workshop on Image, Video, and Multidimensional Signal Processing,* Seoul, Korea, June 2013.
22. **Keynote Address,** *SPIE Conference on Image Quality and System Performance,* San Francisco, California, January 2014.
23. **Plenary Address,** *IEEE Southwest Symposium on Image Analysis and Interpretation,* San Diego, California, April 2014.
24. **Keynote Address,** *Second IEEE Global Conference on Signal and Information Processing,* Atlanta, Georgia, December 2014.
25. **Keynote Address**, *Eighth International Conference on Image and Graphics* (ICIG), Tianjin, China, August 2015.
26. **Plenary Address,** *IEEE Southwest Symposium on Image Analysis and Interpretation,* Santa Fe, New Mexico, March 2016.

27. **Keynote Address,** Thomas Huang Symposium, The Beckman Institute, The University of Illinois, Urbana, Illinois, October 1, 2016.
28. **Keynote Address**, *IEEE International Workshop on Signal Processing Systems,* Dallas, Texas, October 26-28, 2016.
29. **Keynote Address,** *International Conference on Computer Analysis of Images and Patterns,* Ystad, Sweden, August 2017.
30. **Plenary Address,** *IEEE Southwest Symposium on Image Analysis and Interpretation,* Las Vegas, Nevada, April 2018.
31. **Keynote Address,** *Picture Quality Symposium,* San Francisco, California, June 2018.
32. **Keynote Address,** *European Workshop on Visual Information Processing (EUVIP),* Tampere, Finland, November 2018.
33. **Keynote Address,** *SPIE Conference on Image Quality and System Performance,* San Francisco, California, January 2019.
34. **Plenary Address,** *IEEE Southwest Symposium on Image Analysis and Interpretation,* Santa Fe, New Mexico, March 2020.
35. **Keynote Address,** *First Workshop on Aesthetic and Technical Quality Assessment of Multimedia* (ATQAM 2020), *ACM Multimedia,* October 2020.
36. **Keynote Address,** *Conference on Graphics, Patterns and Images* (SIBGRAPI), Porto de Galinhas, Brazil, November 2020.
37. **Keynote Address**, *IEEE Annual Computing and Communication Workshop and Conference,* Virtual Conference, January 2021.
38. **Keynote Address,** *Data Compression Conference,* Snowbird, Utah, March 2021.
39. **Keynote Address,** *IEEE CVPR Workshop on New Trends in Image Restoration and Enhancement (NTIRE),* June 2021.
40. **Keynote Address,** *IEEE International Conference on Multimedia and Expo,* July 2021.
41. **Keynote Address,** *Amazon Workshop on Image and Video Quality,* July 2021.
42. **Keynote Address,** *Y-BASE AI Symposium, Yonsei University,* Seoul, Korea, October 2021.
43. **Keynote Address,** *IEEE Workshop on Video/Audio Quality in Computer Vision,* Waikoloa, Hawaii, January 2022.
44. **Keynote Address,** *IEEE CVPR Workshop on Perception Beyond the Visible Spectrum,* June 2022.
45. **Keynote Address,** "Video Quality: A Nexus of Video Engineering and Visual Neuroscience," *ACM Mile High Video Event,* Denver, Colorado, May 2023.
46. **Keynote Address,** "Visual Quality in the Era of Bigger, Faster, and Deeper Videos," *Southwest Symposium on Image Analysis and Interpretation,* Santa Fe, New Mexico, April 2024.
47. **Keynote Address,** "On the Visual Quality of Pictures, Games, and GenAI," *IEEE/CVF CVPR Workshop on Vision, Graphics, and AI for Streaming,* Seattle, Washington, June 17, 2024.
48. **Keynote Address,** *Indian Conference on Computer Vision, Graphics and Image Processing,* IIIT-Bangalore, December 13-15, 2024.
49. **Keynote Address,** *International Conference on Computing, Networking and Communications,* Honolulu, Hawaii, February 17-20, 2025.

Professional Society Activities

Editorships and Publication Boards

1. Textbook reviewer for McGraw-Hill, West Educational, Academic Press, Prentice-Hall, and

The MIT Press.
2. Editorial Board, *Pattern Recognition,* 1988 - present.
3. Associate Editor, *IEEE Transactions on Signal Processing,* 1989 - 1993.
4. Publications Board, IEEE Signal Processing Society, 1989 - 2002.
5. Guest Editor, Special Issue on "Three-Dimensional Microscopy," *Machine Vision and Applications,* volume 4, no. 4, November 1991.
6. Steering Committee, *IEEE Transactions on Image Processing,* 1991 - 1995.
7. Editorial Board, *Journal of Visual Communication and Image Representation,* 1992 - 1995.
8. Associate Editor, *IEEE Signal Processing Letters,* 1993 - 1995.
9. Area Editor, *Graphical Models and Image Processing,* 1995 - 1998.
10. Editor-in-Chief, *IEEE Transactions on Image Processing,* 1996 - 2002.
11. Editorial Board, *Pattern Analysis and Applications,* 1997-1998.
12. Editorial Board, *The Proceedings of the IEEE,* 1998 - 2002.
13. Editorial Board, *Real-Time Imaging,* 2000 - 2004.
14. Series Editor for Image, Video, and Multimedia Processing, Morgan and Claypool Publishing Company, 2003 - present.
15. Editorial Board of the *Enyclopedia of Multimedia,* Kluwer Academic Publishing, 2005.
16. Senior Editorial Board, *IEEE Journal on Special Topics in Signal Processing,* 2006-present.
17. Editorial Board of the *Encyclopedia of Wireless and Mobile Communications,* 2006.
18. Overview Editor, *IEEE Transactions on Image Processing,* 2009-present.
19. Guest Editor, *IEEE Journal of Selected Topics in Signal Processing,* Special Issue on Special Issue on Perception Inspired Video Processing, 2013.
20. Senior Editorial Board, *IEEE Journal of Selected Topics in Signal Processing,* 2015-2018.

Conference Chairmanships

1. Local Arrangements Chairman, *IEEE Computer Society Workshop on the Interpretation of 3–D Scenes,* Austin, Texas, November 24-27, 1989.
2. Program Chairman, SPIE Program on Image Processing, *SPIE/SPSE Symposium on Electronic Imaging,* Santa Clara, California, February 11-16, 1990.
3. Conference Chairman and Organizer, *SPIE Conference on Biomedical Image Processing,* Santa Clara, California, February 11-16, 1990.
4. Conference Chairman and Organizer, *SPIE Conference on Biomedical Image Processing II,* San Jose, California, February 24 - March 1, 1991.
5. Conference Co-Chairman, *SPIE Conference on Wavelet Applications in Signal and Image Processing,* San Diego, California, July 12-13, 1993.
6. General Chairman, *First IEEE International Conference on Image Processing,* Austin, Texas, November 14-16, 1994.
9. General Chair, *Texas Wireless Symposium,* Austin, Texas, November 2014.
7. Honorary General Chair, *IEEE Southwest Symposium on Image Analysis and Interpretation,* Las Vegas, Nevada, April 2018.

Other Conference Technical Committees and Program Committees

1. Technical Program Committee, *Tenth International Conference on Pattern Recognition,* Atlantic City, New Jersey, June 1990.
2. Technical Program Committee, *IEEE Computer Society Conference on Computer Vision and Pattern Recognition,* Maui, Hawaii, June 1991.

3. Technical Program Committee, *SPIE Symposium on Visual Communications and Image Processing,* Boston, Massachusetts, November 1992.
4. Technical Program Committee, *IEEE Computer Society Conference on Computer Vision and Pattern Recognition,* New York, New York, June 1993.
5. Conference Board, IEEE Signal Processing Society, 1992 - 1995.
6. Technical Program Committee, *Twelfth International Conference on Pattern Recognition,* Jerusalem, Israel, October 1994.
7. Technical Program Committee, *IEEE Workshop on Biomedical Image Analysis,* Seattle, Washington, June 1994.
8. Technical Program Committee, *IEEE Workshop on Nonlinear Signal and Image Processing,* Neos Marmaras-Halkidiki, Greece, June 1995.
10. Technical Program Committee, *IEEE International Conference on Image Processing,* Washington, DC, October 1995.
11. U.S. Liason, *IEEE International Conference on Image Processing,* Lausanne, Switzerland, November 1996.
12. Technical Program Committee, *IEEE International Conference on Image Processing,* Santa Barbara, CA, October 1997.
13. Scientific Committee, *European Signal Processing Conference* (EUSIPCO), Rhodes, Greece, September 1998.
14. Technical Program Committee, *IEEE International Conference on Image Processing,* Chicago, IL, October 1998.
15. Technical Program Committee, *IEEE Computer Society Conference on Computer Vision and Pattern Recognition,* Santa Barbara, California, June 1998.
16. Technical Program Committee, *IEEE International Conference on Image Processing,* Vancouver, British Columbia, September 2000.
17. Technical Program Committee, *IEEE International Conference on Image Processing,* Thessaloniki, Greece, October 2001.
18. Organizing Committee, *IASTED International Conference on Signal and Image Processing - SIP 2002,* Kauai, Hawaii, August 12-14, 2002.
19. Technical Program Committee, *IEEE International Conference on Image Processing,* Rochester, New York, September 2002.
20. Technical Program Committee, *IEEE International Conference on Image Processing,* Barcelona, Spain, September 2003.
21. Technical Program Committee, *SPIE Symposium on Visual Communications and Image Processing,* Lugano, Switzerland, November 2003.
22. Technical Program Committee, *IEEE International Conference on Image Processing,* Singapore, October 2004.
23. Technical Program Committee, *SPIE Symposium on Visual Communications and Image Processing,* San Jose, California, November 2004.
24. Technical Program Committee, *IEEE International Conference on Image Processing,* Genoa, Italy, September 2005.
25. Technical Program Committee, *SPIE Symposium on Visual Communications and Image Processing,* Beijing, China, November 2005.
26. Technical Program Committee, *First International Workshop on Video Processing and Quality Metrics for Consumer Electronics, Scottsdale,* Arizona, January 2005.
27. Technical Program Committee, *SPIE Symposium on Visual Communications and Image*

Processing, San Jose, California, January 2006.

28. Technical Program Committee, *Second International Workshop on Video Processing and Quality Metrics for Consumer Electronics,* Scottsdale, Arizona, January 2006.
29. International Program Committee, *IASTED International Conference on Signal and Image Processing* Honolulu, Hawaii, August 2006.
30. Technical Program Committee, *Southwest Symposium on Image Analysis and Interpretation,* Denver, Colorado, March 2006.
31. Technical Program Committee, *IEEE International Conference on Image Processing,* Atlanta, Georgia, October 2006.
32. Technical Program Committee, *Third International Workshop on Video Processing and Quality Metrics for Consumer Electronics,* Scottsdale, Arizona, January 26-26, 2007.
33. Technical Program Committee, *SPIE Symposium on Visual Communications and Image Processing,* San Jose, California, January 2007.
34. Technical Program Committee, *IEEE International Conference on Image Processing,* San Antonio, Texas, September 2007.
35. Technical Program Committee, *SPIE Symposium on Visual Communications and Image Processing,* San Jose, California, January 2008.
36. Technical Program Committee, *IEEE International Conference on Image Processing,* San Diego, California, October 2008.
37. International Technical Program Committee, *Sixth Indian Conference on Computer Vision, Graphics, and Image Processing,* Bhubaneswar, India, December 2008.
38. Advisory Committee and Technical Program Committee, *First International Workshop on Quality of Multimedia Experience,* San Diego, California, July 2009.
39. Technical Program Committee, *IEEE International Conference on Image Processing,* Cairo, Egypt, November 2009.
40. Steering Committee, *Second International Workshop on Quality of Multimedia Experience,* Trondheim, Norway, June 2010.
41. Technical Program Committee, *IEEE International Conference on Image Processing,* Hong Kong, September 2010.
42. Steering Committee, *Third International Workshop on Quality of Multimedia Experience,* Mechelen, Belgium, September 2011.
43. Technical Program Committee, *IEEE International Conference on Image Processing,* Brussels, Belgium, September 2011.
44. Technical Program Committee, *IAPR/IEEE International Joint Conference on Biometrics,* Brussels, Belgium, October 2011.
45. Steering Committee, *Fourth International Workshop on Quality of Multimedia Experience,* Yarra Valley, Australia, July 2012.
46. Technical Program Committee, *IEEE International Conference on Image Processing,* Orlando, Florida, October 2012.
47. Technical Program Committee, *European Workshop on Visual Information Processing*, Paris, France, June 2013.
48. Steering Committee, *Fifth International Workshop on Quality of Multimedia Experience,* Klagenfurt am Wörthersee, Austria, July 2013.
49. Technical Program Committee, *IEEE International Conference on Image Processing,* Melbourne, Australia, September 2013.
50. Technical Program Committee, *International Symposium on Image and Signal Processing and*

Analysis, Trieste, Italy, September 2013.
51. Technical Program Committee, *IEEE International Conference on Image Processing,* Paris, France, October 2014.
52. Technical Program Committee, *IEEE Global Conference on Signal and Information Processing* (GlobalSIP), Atlanta, Georgia, December 2014.
53. Technical Program Committee, *ACM Workshop on Perception Inspired Video Processing,* Orlando, Florida, November 2014.
54. Technical Program Committee, *IEEE International Conference on Image Processing,* Quebec, Canada, October 2015.
55. Program Committee, *Third Workshop on Quality of Multimedia Services* (QUAMUS), Naples, Italy, November 2016.
56. Technical Program Committee, *IEEE International Conference on Image Processing,* Phoenix, Arizona, 2016-present.

Standing Society Committees
1. IEEE Computer Society Pattern Analysis and Machine Intelligence Technical Committee, 1988 - present.
2. Image and Multidimensional Digital Signal Processing Technical Committee of the IEEE Signal Processing Society, 1989 - 2002.
3. Member-at-Large, Board of Governors, IEEE Signal Processing Society, 1996 - 2002.
4. Awards Board, IEEE Signal Processing Society, 2004 - 2007.
5. IEEE Communication Society Multimedia Communications Technical Committee, 2010-present.

Government Panels
1. Review Panelist, National Science Foundation, Instrumentation, Sensing, and Measurement Small Business Innovation Research Program, September 1987.
2. Review Panelist, National Science Foundation, Computer Research Equipment Program, November 1987.
3. Review Panelist, National Science Foundation, Research Initiation Awards, March 1993.
4. Review Panelist, National Science Foundation, CAREER Awards, November 2004.
5. Review Panelist, National Science Foundation, Information and Intelligent Systems Awards, November 2004.
6. Review Panelist, National Science Foundation, Science and Technology Centers (STC), September 2015.

Other Panels and Boards
1. Advisory Board, International Center for Signal Processing, Tampere, Finland, 1996 - present.
2. Faculty Advisory Committee, Center for Advanced Studies in the Arts, The University of Texas at Austin, 1997 - 2000.
3. Edwin H. Land Medal Awards Committee, The Optical Society, 2020-2023.
4. SPIE Technical Achievement Award Committee, SPIE, 2020-2023.
5. IEEE Edison Medal Committee, IEEE, 2023-2027.
6. National Academy of Engineering Section 7 Search Committee, 2023-2027.
7. Official Nominator, VinFuture Prize, 2023-present.

Journal Citation Highlights

- Highest-cited paper in the *IEEE Transactions on Image Processing* in three different years (2004, 2012, 2014) including the **highest-cited paper ever** in the same journal (published 2004).
- Highest-cited paper in the *IEEE Signal Processing Letters* in three different years (2002, 2010, 2013) including the **highest-cited paper ever** in the same journal (published 2002).
- Highest-cited paper in the *EURASIP Signal Processing: Image Communication* in three different years (2004, 2013, 2013) including the **highest-cited paper ever** in the same journal (published 2004).
- Highest-cited paper in *IEEE Selected Topics in Signal Processing* in 2009.
- Highest-cited paper in *IEEE Signal Processing Magazine* in 2009.

Journal Publications

1. A.C. Bovik, T.S. Huang, and D.C. Munson, "A generalization of median filtering using linear combinations of order statistics," *IEEE Transactions on Acoustics, Speech, and Signal Processing,* vol. ASSP-31, no. 6, pp. 1342-1350, December 1983.
2. A.C. Bovik, T.S. Huang, and D.C. Munson, "Edge-sensitive image restoration using order-constrained least-squares methods," *IEEE Transactions on Acoustics, Speech, and Signal Processing,* vol. ASSP-33, no. 4, pp. 1253-1263, October 1985.
3. A.C. Bovik and D.C. Munson, "Edge detection using median comparisons," *Computer Vision, Graphics, and Image Processing,* vol. 33, pp. 377-389, March 1986.
4. A.C. Bovik, T.S. Huang, and D.C. Munson, "Nonparametric tests for edge detection in noise," *Pattern Recognition,* vol. 19, No. 3, pp. 209-219, 1986.
5. A.C. Bovik and D.C. Munson, "Optimal detection of object boundaries in uncorrelated speckle," *Optical Engineering,* vol. 25, no. 11, pp. 1246-1252, November 1986.
6. J.K. Aggarwal, K.R. Diller, and A.C. Bovik, "Computer vision and image processing research at the University of Texas at Austin," *Image and Vision Computing,* vol. 4, no. 4, pp. 219-222, November 1986.
7. A.C. Bovik, T.S. Huang, and D.C. Munson, "The effect of median filtering on edge estimation and detection," *IEEE Transactions on Pattern Analysis and Machine Intelligence,* vol. PAMI-9, no. 2, pp. 181-194, March 1987.
8. A.C. Bovik, "Streaking in median filtered images," *IEEE Transactions on Acoustics, Speech, and Signal Processing,* vol. ASSP-35, no. 4, pp. 493-503, April 1987.
9. N.H. Kim, A.B. Wysocki, A.C. Bovik, and K.R. Diller, "A microcomputer-based vision system for area measurement," *Computers in Biology and Medicine,* vol. 17, no. 3, pp. 173-183, June 1987.
10. A.C. Bovik and A. Restrepo, "Spectral properties of moving L-estimates of independent data sequences," *Journal of the Franklin Institute,* vol. 324, no. 1, pp. 125-137, 1987.
11. M. Clark, A.C. Bovik, and W.S. Geisler, "Texture segmentation using Gabor modulation/ demodulation," *Pattern Recognition Letters,* vol. 6, pp. 261-267, September 1987.
12. J.R. Jordan and A.C. Bovik, "Computational stereo using color," Cover Paper of Special Issue on Machine Vision and Image Understanding, *IEEE Control Systems Magazine,* vol. 8, no. 3, pp. 31-36, June 1988.
13. F. Macías-Garza, A.C. Bovik, and K.R. Diller, "Missing cone of frequencies and low-pass distortion in 3-D microscopic images," *Optical Engineering,* vol. 27, no. 6, pp. 461-465, June 1988.

14. S.H. Kim, K.T. Park, and A.C. Bovik, "Recognition of Korean isolated digits using a pole-zero model," *Journal of the Korean Acoustical Society,* vol. 25, no. 4, pp. 356-365, June 1988.
15. F. Macías-Garza, A.C. Bovik, K.R. Diller, S.J. Aggarwal and J.K. Aggarwal, "Digital reconstruction of three-dimensional serially sectioned optical images," *IEEE Transactions on Acoustics, Speech, and Signal Processing,* vol. ASSP-36, no. 7, pp. 1067-1075, July 1988.
16. A. Restrepo and A.C. Bovik, "On the generation of random numbers from heavy-tailed distributions," *Proceedings of the IEEE,* vol. 76, no. 7, pp. 838-840, July 1988.
17. A. Restrepo and A.C. Bovik, "Adaptive trimmed mean filters for image restoration," *IEEE Transactions on Acoustics, Speech, and Signal Processing,* vol. ASSP-36, no. 8, pp. 1326-1337, August 1988.
18. C.-C. Chu and A.C. Bovik, "Visible surface reconstruction via local minimax approximation," *Pattern Recognition,* vol. 21, no. 4, pp. 303-312, 1988.
19. A.C. Bovik, "On detecting edges in speckle imagery," *IEEE Transactions on Acoustics, Speech, and Signal Processing,* vol. ASSP-36, no. 10, pp. 1618-1627, October 1988.
20. N.H. Kim and A.C. Bovik, "A contour-based stereo matching algorithm using disparity continuity," *Pattern Recognition,* vol. 21, no. 5, pp. 505-514, 1988.
21. D.D. Kerrick and A.C. Bovik, "Microprocessor-based recognition of handprinted characters from a tablet input," *Pattern Recognition,* vol. 21, no. 5, pp. 525-537, 1988.
22. H.G. Longbotham and A.C. Bovik, "Theory of order statistic filters and their relationship to linear FIR filters," *IEEE Transactions on Acoustics, Speech, and Signal Processing,* vol. ASSP-37, no. 2, pp. 275-287, February 1989.
23. H.G. Longbotham and A.C. Bovik, "Comments on 'The analog median filter'," *IEEE Transactions on Circuits and Systems,* vol. CAS-36, no. 2, p. 310, February 1989.
24. N.H. Kim, S.J. Aggarwal, A.C. Bovik, K.R. Diller and J.K. Aggarwal, "Stereoscopic analysis of shape changes in solanum tuberosa slices under osmotic shock," *European Journal of Cell Biology,* vol. 48, pp. 21-24, 1989.
25. F. Macías-Garza, K.R. Diller, A.C. Bovik, S.J. Aggarwal and J.K. Aggarwal, "Improvement in the resolution of 3D data sets collected using optical serial sectioning," *Journal of Microscopy,* Special Issue on 3-D Microscopy, vol. 153, no. 2, pp. 205-221, February 1989.
26. J.Y. Jou and A.C. Bovik, "Improved initial approximation and intensity-guided discontinuity detection in visible-surface reconstruction," *Computer Vision, Graphics, and Image Processing,* vol. 47, pp. 292-326, August 1989.
27. L. Naaman and A.C. Bovik, "Least-squares order statistic filters with coefficient censoring," *Signal Processing,* vol. 18, no. 2, pp. 139-152, October 1989.
28. F. Macías-Garza, K.R. Diller, A.C. Bovik, S.J. Aggarwal and J.K. Aggarwal, "Obtaining a solid model from optical serial sections," *Pattern Recognition,* vol. 22, no. 5, pp. 577-586, 1989.
29. M. Clark and A.C. Bovik, "Experiments in segmenting texton patterns using localized spatial filters," *Pattern Recognition,* vol. 22, no. 6, pp. 707-717, 1989.
30. A.C. Bovik, M. Clark and W.S. Geisler, "Multichannel texture analysis using localized spatial filters," *IEEE Transactions on Pattern Analysis and Machine Intelligence,* vol. PAMI-12, no. 1, pp. 55-73, January 1990.
31. N.H. Kim, A.C. Bovik, and S.J. Aggarwal, "Shape description of biological objects via stereo light microscopy," *IEEE Transactions on Systems, Man, and Cybernetics,* vol. SMC-20, no. 2, pp. 475-489, March/April 1990.
32. N.H. Kim, S.J. Aggarwal, A.C. Bovik, and K.R. Diller, "3-D model of vascular network in rat

skin obtained by stereo vision techniques," *Journal of Microscopy,* Special Issue on 3-D Microscopy, vol. 154, no. 4, pp. 275-284, May 1990.

33. R.A. Brooks and A.C. Bovik, "Robust techniques for edge detection in multiplicative Weibull image noise," *Pattern Recognition,* vol. 23, no. 10, pp. 1047-1057, October 1990.
34. J.R. Jordan, W.S. Geisler, and A.C. Bovik, "Color as a source of information in the stereo correspondence process," *Vision Research,* vol. 30, no. 12, pp. 1955-1970, December 1990.
35. D. Chen and A.C. Bovik, "Visual pattern image coding," *IEEE Transactions on Communications,* vol. COM-38, no. 12, pp. 2137-2146, December 1990 (winner of 1990 MCC Award for Excellence in Computer Science and Electrical & Computer Engineering).
36. S.T. Acton and A.C. Bovik, "Feature classification techniques in model-based object recognition," *International Journal of Imaging Systems and Technology,* vol. 2, no. 4, pp. 329-344, Winter 1990.
37. C.Y.J. Yip, S.J. Aggarwal, K.R. Diller, and A.C. Bovik, "Multiple sites arteriolar vasomotion measurement using digital image analysis," *Microvascular Research,* vol. 41, pp. 73-83, 1991.
38. L. Naaman and A.C. Bovik, "Least-squares order statistic filters for signal restoration," *IEEE Transactions on Circuits and Systems,* vol. CAS-38, no. 3, pp. 244-257, March 1991.
39. B. Super and A.C. Bovik, "Localized measurement of image fractal dimension using Gabor filters," *Journal of Visual Communication and Image Representation,* vol. 2, no. 2, pp. 114-128, June 1991.
40. J.R. Jordan and A.C. Bovik, "Using chromatic information in edge-based stereo correspondence," *Computer Vision, Graphics, and Image Processing: Image Understanding,* vol. 54, no. 1, pp. 98-188, July 1991.
41. A.C. Bovik, "Analysis of multichannel narrowband filters for image texture segmentation," *IEEE Transactions on Signal Processing,* vol. SP-39, no. 9, pp. 2025-2043, September 1991.
42. A.C. Bovik, "A bound involving *n*-dimensional instantaneous frequency," *IEEE Transactions on Circuits and Systems,* vol. CAS-38, no. 11, pp. 1389-1390, November 1991.
43. C. Lee, D.O. Wipf, A.J. Bard, K.A. Bartels, and A.C. Bovik, "Scanning electrochemical microscopy. 11. Improvement of image resolution by digital processing techniques," *Analytic Chemistry,* vol. 63, no. 21, pp. 2442-2447, November 1991.
44. A.C. Bovik, "Three-dimensional microscopy," *Machine Vision and Applications,* volume 4, no. 4, pp. 211-213, Fall 1991.
45. A.C. Bovik, N. Gopal, T. Emmoth and A. Restrepo, "Localized measurement of emergent image frequencies by Gabor wavelets," Special Issue on Wavelet Transforms and Multiresolution Signal Analysis, *IEEE Transactions on Information Theory,* vol. IT-38, no. 3, pp. 691-712, March 1992.
46. A.C. Bovik, "Integral inequality bounding the weighted absolute deviation of an *n*-dimensional function," *IEEE Transactions on Signal Processing,* vol. SP-40, no. 4, pp. 973-975, April 1992.
47. D. Chen and A.C. Bovik, "Hierarchical visual pattern image coding," *IEEE Transactions on Communications,* vol. COM-40, no. 4, pp. 671-675, April 1992.
48. J.R. Jordan and A.C. Bovik, "Using chromatic information in dense stereo correspondence," *Pattern Recognition,* vol. 25, no. 4, pp. 367-383, April 1992.
49. K.A. Bartels, R.H. Crawford, S. Das, S. Guduri, A.C. Bovik, K.R. Diller and S.J. Aggarwal, "Fabricating macroscopic solid models of microscopic data by selective laser sintering," *Journal of Microscopy,* Special Issue on 3-D Microscopy, vol. 169, no. 3, pp. 383-389, March 1993.

50. F.A. Merchant, S.J. Aggarwal, K.R. Diller, K.A. Bartels, and A.C. Bovik, "3-D distribution of damaged cells in cryopreserved pancreatic islets as determined by laser scanning confocal microscopy," *Journal of Microscopy,* Special Issue on 3-D Microscopy, vol. 169, no. 3, pp. 329-338, March 1993.
51. K.A. Bartels, A.C. Bovik, S.J. Aggarwal and K.R. Diller, "The analysis of biological shape changes from multi-dimensional dynamic images," *Journal of Computerized Medical Imaging and Graphics,* vol. 17, no. 2, pp. 89-99, May 1993.
52. P.L. Silsbee, A.C. Bovik, and D. Chen, "Visual pattern image sequence coding," *IEEE Transactions on Circuits and Systems for Video Technology,* vol. CAS-VT-3, no. 4, pp. 291-301, August 1993.
53. A. Restrepo and A.C. Bovik, "Locally monotonic regression," *IEEE Transactions on Signal Processing,* vol. ASSP-41, no. 9, pp. 2796-2810, September 1993.
54. A.C. Bovik, P. Maragos and T.F. Quatieri, "AM-FM energy detection and separation in noise using multiband energy operators," *IEEE Transactions on Signal Processing,* Special Issue on Wavelets and Signal Processing, vol. ASSP-41, no. 12, pp. 3245-3265, December 1993.
55. A.C. Bovik and P. Maragos, "Conditions for positivity of an energy operator," *IEEE Transactions on Signal Processing,* vol. ASSP-42, no. 2, pp. 469-471, February 1994.
56. A. Restrepo and A.C. Bovik, "On the statistical optimality of locally monotonic regression," *IEEE Transactions on Signal Processing,* vol. ASSP-42, no. 6, pp. 1548-1550, June 1994.
57. F.A. Merchant, S.J. Aggarwal, K.R. Diller, and A.C. Bovik, "In vivo analysis of angiogenesis and revascularization of transplanted pancreatic islets using confocal microscopy," *Journal of Microscopy,* Special Issue on 3-D Microscopy, vol. 176, no. 3, pp. 262-275, December 1994.
58. B.J. Super and A.C. Bovik, "Shape from texture using local spectral moments," *IEEE Transactions on Pattern Analysis and Machine Intelligence,* vol. PAMI-17, no. 4, pp. 333-343, April 1995.
59. B.J. Super and A.C. Bovik, "Planar surface orientation from texture spatial frequencies," *Pattern Recognition,* vol. 28, no. 5, pp. 729-743, May 1995.
60. P. Maragos and A.C. Bovik, "Image amplitude and frequency demodulation using multidimensional energy separation," *Journal of the Optical Society of America,* vol. 12, no. 9, pp. 1867-1876, September 1995.
61. S.T. Acton and A.C. Bovik, "Generalized deterministic annealing," *IEEE Transactions on Neural Networks,* vol. 7, no. 3, pp. 686-699, May 1996.
62. J.P. Havlicek, D.S. Harding, and A.C. Bovik, "The multicomponent AM-FM image representation," *IEEE Transactions on Image Processing,* Special Issue on Nonlinear Image Processing, vol. 6, no. 5, pp. 1094-1100, June 1996.
63. P.L. Silsbee and A.C. Bovik, "Computer lipreading for improved accuracy in automatic speech recognition," *IEEE Transactions on Speech and Audio Processing,* vol. 4, no. 5, pp. 337-351, September 1996.
64. F.A. Merchant, S.J. Aggarwal, K.R. Diller, and A.C. Bovik, "Viability analysis of cryopreserved rat pancreas islets using laser scanning confocal microscopy," *Cryobiology,* vol. 33, pp. 236-252, 1996.
65. B.S. Barnett and A.C. Bovik, "Motion compensated visual pattern image sequence coding for full motion multisession videoconferencing on multimedia workstations," *Journal of Electronic Imaging,* Special Issue on Multimedia Systems, vol. 5, no. 2, pp. 129-143, April 1996.
66. A.C. Bovik, J.P. Havlicek, M.D. Desai and D.S. Harding, "Limits on discrete modulated

signals," *IEEE Transactions on Signal Processing,* vol. 45, no. 4, pp. 867-879, April 1997.
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405. T.R. Goodall, A.C. Bovik, H. Vikalo and N. Paulter, "Non-uniformity correction of IR images using natural scene statistics," *IEEE Global Conference on Signal and Information Processing,* Orlando, Florida, December 14-16, 2015.
406. Z. Sinno and A.C. Bovik, "Generalizing a closed-form correlation model of oriented bandpass natural images," *IEEE Global Conference on Signal and Information Processing,* Orlando,

Florida, December 14-16, 2015.

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409. J. Pan, V. Appia, and A.C. Bovik, "Virtual top-view camera calibration for accurate object representation," *IEEE Southwest Symposium on Image Analysis and Interpretation,* Santa Fe, New Mexico, March 6-8, 2016.
410. Z. Sinno and A.C. Bovik, "Relating spatial and spectral models of oriented bandpass natural images," *IEEE Southwest Symposium on Image Analysis and Interpretation,* Santa Fe, New Mexico, March 6-8, 2016.
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413. A.C. Bovik, "Trends in perception of displayed 3D stereoscopic content," Invited Paper, *Society for Information Display International Symposium,* San Francisco, California, May 22-27, 2016.
414. C. Ancuti, C. Ancuti, C. De Vleeschouwer, and A.C. Bovik, "Night-time dehazing by fusion," *IEEE International Conference on Image Processing,* Phoenix, Arizona, September 25-28, 2016.
415. C. Bampis, P. Maragos, and A.C. Bovik, "Projective non-negative matrix factorization for unsupervised graph clustering," *IEEE International Conference on Image Processing,* Phoenix, Arizona, September 25-28, 2016.
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418. C. Ancuti, C. Ancuti, C. Devleeschouwer, R. Garcia, and A.C. Bovik, "Multi-scale underwater descattering," *23nd International Conference on Pattern Recognition,* Cancun, Mexico, December 4-8, 2016.
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420. D. Ghadiyaram, J. Pan, A.C. Bovik, A. Moorthy, P. Panda and K.-C. Yang, "Subjective and objective quality assessment of mobile videos with in-capture distortions," *IEEE International Conference on Acoustics, Speech, and Signal Processing,* New Orleans, Lousiana, March 5-9, 2017.
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422. A.C. Bovik, C. Bampis and T.R. Goodall, "Perceptual issues of streaming video," Invited Paper, *Society for Information Display International Symposium,* Los Angeles, California, May 21-26, 2017.
423. C. Bampis and A.C. Bovik, "Temporal and behavioral aspects of subjective video quality perception," *Seventeenth Annual Meeting of the Vision Sciences Society,* St. Petersburg, Florida, May 19-24, 2017.
424. C. Bampis, Z. Sinno, and A.C. Bovik, "Localizing and correcting exposure-saturated regions using a natural image statistics model," *Seventeenth Annual Meeting of the Vision Sciences Society,* St. Petersburg, Florida, May 19-24, 2017.
425. T.R. Goodall and A.C. Bovik, "Upscaling and comb artifact prediction on motion pictures using convolution networks," *Seventeenth Annual Meeting of the Vision Sciences Society,* St. Petersburg, Florida, May 19-24, 2017.
426. C.G. Rodriguez -Pulicio, H.D. Benítez-Restrepo, and A.C. Bovik, "Image quality assessment to enhance infrared face recognition," *IEEE International Conference on Image Processing,* Beijing, China, September 17-20, 2017.
427. C. Bampis, C. Rusu, H. Hajj, and A.C. Bovik, "Robust matrix factorization for collaborative filtering in recommender systems," *Fifty-First Annual Asilomar Conference on Signals, Systems, and Computers, Monterey,* California, October 29 - November 1, 2017.
428. T.M. Jarriel, F. Isikdogan, P. Passalacqua, and A.C. Bovik, "Ganges-Brahmaputra-Meghna delta connectivity analysis using new tools for the automatic extraction of channel networks from remotely sensed imagery," *American Geophysical Union Fall Meeting,* New Orleans, Louisiana, December 11-15, 2017.
429. Z. Sinno, C. Caramanis, and A.C. Bovik, "Second order natural scene statistics model of blind image quality assessment," *IEEE International Conference on Acoustics, Speech, and Signal Processing,* Calgary, British Columbia, Canada, April 15-20, 2018.
430. Z. Sinno and A.C. Bovik, "On the natural statistics of chromatic images," *IEEE Southwest Symposium on Image Analysis and Interpretation,* Las Vegas, Nevada, April 9-11, 2018.
431. T. Goodall and A.C. Bovik, "Artifact detection maps learned using shallow convolutional networks," *IEEE Southwest Symposium on Image Analysis and Interpretation,* Las Vegas, Nevada, April 9-11, 2018.
432. P. Gupta, C. Bampis, Y. Jin, and A.C. Bovik, "Natural scene statistics for noise estimation," *IEEE Southwest Symposium on Image Analysis and Interpretation,* Las Vegas, Nevada, April 9-11, 2018.
433. S. Kwon, S. Kim, H.S. Lee, J.Y. Park, K.J. Kim, M.K. Markey, A.C. Bovik, S. Bang, S.W. Park, S.Y. Song, J.B. Chung and M.J. Chung, "Survival analysis based on relationship between lewis antigen and carbohydrate antigen 19-9 in 1115 patiens with pancreatic cancer in 1115 asian population," *Digestive Disease Week,* Washington DC, June 2-5, 2018.
434. S. Kim, S. Kwon, H.S. Lee, K.J. Kim, M.K. Markey, A.C. Bovik, J.Y. Park, S. Bang, S.W. Park, S.Y. Song, J.B. Chung and M.J. Chung, "CA19-9 nadir within the first 12 weeks of chemotherapy predicts overall survival in patients with advanced pancreatic cancer," *Digestive Disease Week,* Washington DC, June 2-5, 2018.
435. P. Gupta, C. Bampis, Y. Ji, and A.C. Bovik, "Natural scene statistics for noise estimation," *IEEE Southwest Symposium on Image Analysis and Interpretation,* Las Vegas, Nevada, April 8-10, 2018.
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Nevada, April 8-10, 2018.

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438. C. Bampis, Z. Li, and A.C. Bovik, "A simple prediction fusion improves data-driven full-reference video quality assessment models," *Picture Coding Symposium,* San Francisco, California, June 24-27, 2018.
439. T. Goodall and A.C. Bovik, "Detecting source video artifacts with supervised sparse filters," *Picture Coding Symposium,* San Francisco, California, June 24-27, 2018 (**Best Paper Award**).
440. Z. Sinno, A.K. Moorthy, J. De Cock, Z. Li, and A.C. Bovik, "Quality assessment of thumbnail and billboard images on mobile devices," *Picture Coding Symposium,* San Francisco, California, June 24-27, 2018.
441. X. Yu, C.G. Bampis, P. Gupta, and A.C. Bovik, "Predicting the quality of images compressed after distortion in two steps," *SPIE Conference on Applications of Digital Image Processing,* San Diego, California, August 19-23, 2018.
442. Z. Sinno and A.C. Bovik, "Predicting 3D visual discomfort using natural scene statistics and a binocular model," *SPIE Conference on Applications of Digital Image Processing,* San Diego, California, August 19-23, 2018.
443. S. Kim, S. Kwon, M.K. Markey, A.C. Bovik, S.H. Hong, J. Kim, B. Joung and J. Park, "Paroxysmal versus persistent atrial fibrillation: cross-institutional validation of predictive benefit of surface 12-lead electrocardiography," *European Society of Cardiology Congress,* Munich, Germany, August 25-29, 2018.
444. S. Kwon, S. Kim, A.C. Bovik, M.K. Markey, H. Lee, G. Joo, B. Joung, H. Im, and J. Park, "Risk of mortality depends on the temporal sequence of atrial fibrillation and ischemic stroke," *European Society of Cardiology Congress,* Munich, Germany, August 25-29, 2018.
445. S. Kwon, S. Kim, A.C. Bovik, M.K. Markey, H. Lee, B. Joung, H. Im, and J. Park, "Sex differences in influence of atrial fibrillation upon mortality of patients with ischemic stroke," *European Society of Cardiology Congress,* Munich, Germany, August 25-29, 2018.
446. J. Pan, M. Mueller, T. Lahlou, and A.C. Bovik, "Orthogonally-divergent fisheye stereo," *Advanced Concepts for Intelligent Vision Systems Conference,* Poitiers, France, September 24-27, 2018.
447. H. Zeng, L. Zhang, and A.C. Bovik, "Blind image quality assessment with a probabilistic quality representation," *IEEE International Conference on Image Processing,* Athens, Greece, October 7-10, 2018.
448. C. Bampis, Z. Li, and A.C. Bovik, "Enhancing temporal quality measurements in a globally deployed streaming video quality predictor," *IEEE International Conference on Image Processing,* Athens, Greece, October 7-10, 2018.
449. Z. Sinno and A.C. Bovik, "Large scale subjective video quality study," *IEEE International Conference on Image Processing,* Athens, Greece, October 7-10, 2018.
450. P. Gupta, C. Bampis, and A.C. Bovik, "Multivariate statistics for blind image quality applications," *IEEE International Conference on Image Processing,* Athens, Greece, October 7-10, 2018.
451. C. Zhang, J. Zhou, X. Gu, S. Zhu, and A.C. Bovik, "Eye movement pattern modeling and visual comfort viewing S3D images," *IEEE International Conference on Visual Communications and Image Processing,* Taichung, Taiwan, December 9-12, 2018.
452. S. Kwon, S. Kim, H. Im, A.C. Bovik, B. Joung and J. Park, "Gamma glutamyl transferase predicts new onset atrial fibrillation," *American Heart Association Scientific Sessions,*

Chicago, Illinois, November 10-12, 2018.

453. P. Gupta, C. Bampis, J. Glover, N. Paulter, and A.C. Bovik, "Multivariate statistical modeling for image quality prediction," *SPIE Conference on Image Quality and System Performance,* Burlingham, California, January 13-17, 2019.
454. C. Bampis, Z. Li, I. Katsavounidas, T.Y. Huang, C. Ekanadhan, and A.C. Bovik, "Subjective analysis of an end-to-end streaming system," *SPIE Conference on Image Quality and System Performance,* Burlingham, California, January 13-17, 2019.
455. J. Berón, H.D.B. Restrepo, and A.C. Bovik, "Optimal feature selection for blind super-resolution image quality evaluation," *IEEE International Conference on Acoustics, Speech, and Signal Processing,* Brighton, England, May 12-17, 2019.
456. S. Zafari, T. Eerola, P. Ferriera, H. Kalviainen, and A.C. Bovik, "Automated segmentation of nanoparticles in BF TEM images by U-net binarization and branch and bound," *International Conference on Computer Analysis of Images and Patterns,* Salerno, Italy, September 2-5, 2019.
457. S. Zafari, M. Diab, T. Eerola, S.E. Hanson, G.P. Reece, G.J. Whitman, M. Markey, K. Ravi-Chandar, A.C. Bovik, and H. Kalviainen, "Automated segmentation of the pectoral muscle in axial breast MR images," *International Symposium on Visual Computing,* Lake Taho, Nevada, October 7-9, 2019.
458. R.G. Nieto, H.D.B. Restrepo, R.F. Quintero, and A.C. Bovik, "No reference video quality assessment with authentic distortions using 3-D deep convolutional neural network," *Image Quality and System Performance Conference, IS&T Electronic Imaging,* January 2020.
459. S. Kim, J.S. Park, C. Bampis, J. Lee, M. Markey, A. Dimakis, and A.C. Bovik, "Adversarial video compression guided by soft edge detection," *IEEE International Conference on Acoustics, Speech, and Signal Processing,* Barcelona, Spain, May 4-8, 2020.
460. Z. Tu, J. Lin, Y. Wang, B. Adsumilli, and A.C. Bovik, "BBAND index: A no-reference banding artifact predictor," *IEEE International Conference on Acoustics, Speech, and Signal Processing,* Barcelona, Spain, May 4-8, 2020.
461. Z. Ying, H. Niu, P. Gupta, D. Mahajan, D. Ghadiyaram, and A.C. Bovik, "From patches to pictures (PaQ-2-PiQ): Mapping the perceptual space of picture quality," *IEEE Computer Society Conference on Computer Vision and Pattern Recognition,* Seattle, Washington, June 13-19, 2020.
462. A.C. Bovik, "Weeping and gnashing of teeth: Teaching deep learning in image and video processing classes," *IEEE Southwest Symposium on Image Analysis and Interpretation,* Las Vegas, Nevada, March 30-31, 2020.
463. Y. Jin, T. Goodall-Bell, and A.C. Bovik, "Study of 2D foveated video quality in virtual reality," *SPIE Optical Engineering + Applications,* San Diego, California, August 23-27, 2020.
464. Z. Tu, C.-J. Chen, L.-H. Chen, N. Birkbeck, B. Adsumilli, and A.C. Bovik, "A comparative evaluation of temporal pooling methods for blind video quality assessment," *IEEE International Conference on Image Processing,* United Arab Emirates, October 25-28, 2020.
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466. A.K. Venkataramanan, C. Wu, and A.C. Bovik, "Optimizing video quality estimation across resolutions," *IEEE International Workshop on Multimedia Signal Processing,* Tampere, Finland, September 21-23, 2020.
467. D.Y. Lee, H. Ko, J. Kim, and A.C. Bovik, "Video quality model for space-time resolution

adaptation," *IEEE International Conference on Image Processing, Applications and Systems,* Genova, Italy, December 9-11, 2020.

468. P. Gupta, M.B. Faktor, J.L. Glover, and A.C. Bovik, "Validating the quality of millimeter-wave images input to deep-learning-based threat detection systems," *SPIE Conference on Automatic Target Recognition XXXI (virtual),* April 12, 2021.
469. Z. Ying, M. Mandal, D. Mahajan, D. Ghadiyaram, and A.C. Bovik, "Patch VQ: 'Patching up the video quality problem," *IEEE Computer Society Conference on Computer Vision and Pattern Recognition,* Virtual, June 19-25, 2021.
470. Y. Jin, L. Zhao, X. Zhao, S. Liu, and A.C. Bovik, "Improved intra mode coding beyond AV1," *IEEE International Conference on Acoustics, Speech, and Signal Processing, Toronto, Canada,* June 6-11, 2021.
471. Z. Tu, C.-J. Chen, L.-H. Chen, Y. Wang, N. Birkbeck, B. Adsumilli, and A.C. Bovik, "Regression or classification? New methods to evaluate no-reference picture and video quality models," *IEEE International Conference on Acoustics, Speech, and Signal Processing, Toronto, Canada,* June 6-11, 2021.
472. Z. Tu, C.-J. Chen, Y. Wang, N. Birkbeck, B. Adsumilli, and A.C. Bovik, "Efficient user-generated video quality prediction," *Picture Coding Symposium,* Bristol, United Kingdom, June 29-July 2, 2021.
473. Y. Jin, A. Patney and A.C. Bovik, "Evaluating foveated video quality using entropic differencing," *Picture Coding Symposium, Bristol, United Kingdom,* June 29-July 2, 2021.
474. Z. Shang, J.P. Ebenezer, S. Sethuraman, Y. Wu, H. Wei, and A.C. Bovik, "Assessment of subjective and objective quality of live streaming sports videos," *Picture Coding Symposium,* Bristol, United Kingdom, June 29-July 2, 2021.
475. M. Chen, A. Patney, and A.C. Bovik, "MOVI-Codec: Deep video compression without motion," *Picture Coding Symposium,* Bristol, United Kingdom, June 29-July 2, 2021.
476. L.H. Chen, C. Bampis, Z. Li, J. Sole, and A.C. Bovik, "A progressive architecture for learned fractional downsampling," *Picture Coding Symposium, Bristol, United Kingdom,* June 29-July 2, 2021
477. P.C. Madhusudana, N. Birkbeck, Y. Wang, B. Adsumilli, and A.C. Bovik, "Frame rate dependent video quality assessment," *Picture Coding Symposium, Bristol, United Kingdom,* June 29-July 2, 2021.
478. Z. Tu, C.-J. Chen, Y. Wang, N. Birkbeck, B. Adsumilli, and A.C. Bovik, "Video quality assessment of user generated content: A benchmark study and a new model," *IEEE International Conference on Image Processing,* Anchorage, Alaska, September 19-22, 2021.
479. Z. Tu, C.-J. Chen, Y. Wang, N. Birkbeck, B. Adsumilli, and A.C. Bovik, "A temporal statistics model for UGC video quality prediction," *IEEE International Conference on Image Processing,* Anchorage, Alaska, September 19-22, 2021.
480. Y. Jin, T. Goodall, A. Patney, and A.C. Bovik, "A foveated video quality assessment model using space-variant natural scene statistics," *IEEE International Conference on Image Processing,* Anchorage, Alaska, September 19-22, 2021.
481. L.-H. Chen, C. Bampis, Z. Li, A. Norkin, and A.C. Bovik, "ProxiQA: A Proxy Approach to Perceptual Optimization of Learned Image Compression," *IEEE International Conference on Image Processing,* Anchorage, Alaska, September 19-22, 2021.
482. X. Yu, Z. Tu, Z. Ying, A.C. Bovik, N. Birkbeck, Y. Wang, and B. Adsumilli, "Subjective quality assessment of user-generated content gaming videos," *IEEE Computer Society Workshop on Applications of Computer Vision,* Waikoloa, Hawaii, January 4-8, 2022.

483. P.C. Madhusudana, N. Birkbeck, Y. Wang, B. Adsumilli, and A.C. Bovik, "Image quality assessment using synthetic images," *IEEE Computer Society Workshop on Applications of Computer Vision,* Waikoloa, Hawaii, January 4-8, 2022.
484. A. Venkataramanan, M. Facktor, P. Gupta, and A.C. Bovik, "Assessing the impact of image quality on object-detection algorithms," *IS&T Conference on Image Quality and System Performance, Virtual Meeting,* January 17, 2022.
485. Q. Zheng, Z. Tu, Y. Fan, X. Zeng, and A.C. Bovik, "No-reference quality assessment of variable frame-rate videos using temporal bandpass statistics," *IEEE International Conference on Acoustics, Speech, and Signal Processing,* Singapore*,* May 22-27, 2022.
486. Z. Tu, H. Talebi, H. Zhang, F. Yang, P. Milanfar, A.C. Bovik, and Y. Li, "MAXIM: Multi-axis MLP for image processing," *IEEE Computer Society Conference on Computer Vision and Pattern Recognition,* New Orleans, Louisiana, June 19-24, 2022.
487. M. Chen, R. Webb, and A.C. Bovik, "Foveated MOVI-Codec: Foveation-based deep video compression without motion," *IEEE International Workshop on Image, Video, and Multidimensional Signal Processing,* Nafplio, Greece, June 26-29, 2022.
488. Z. Shang, J. Ebenezer, A.C. Bovik, Y. Wu, H. Wei, and S. Sethuraman, "Subjective assessment of high dynamic range videos under different ambient conditions," *IEEE International Conference on Image Processing,* Bordeaux, France, October 16-19, 2022.
489. A. Venkataramanan, C. Stejerean, and A.C. Bovik, "FUNQUE: Fusion of unified quality evaluators," *IEEE International Conference on Image Processing,* Bordeaux, France, October 16-19, 2022.
490. Z. Ying, D. Ghadiyaram, and A.C. Bovik, "Telepresence video quality assessment," *European Conference on Computer Vision,* Tel Aviv, Israel, October 23-27, 2022.
491. Z. Tu, H. Talebi, H. Zhang, F. Yang, P. Milanfar, A.C. Bovik, and Y. Li, "MaxViT: Multi-axis vision transformer," *European Conference on Computer Vision,* Tel Aviv, Israel, October 23-27, 2022.
492. L.-H. Chen, C. Bampis, Z. Li, C. Chen, and AC. Bovik, "Convolutional block design for learned fractional downsampling," *Asilomar Conference on Signals, Systems, and Computers,* Asilomar, California, October 30 – November 2, 2022.
493. R. Xu, Z. Tu, Y. Du, X. Dong, J. Li, Z. Meng, J. Ma, A.C. Bovik, and H. Yu, "Pik-Fix: Restoring and colorizing old photos," *IEEE/CVF Winter Conference on Applications of Computer Vision,* Kona, Hawaii, January 3-7, 2023.
494. A. Saha, S. Mishra, and A.C. Bovik, "Re-IQA: Unsupervised Learning for Image Quality Assessment in the Wild," *IEEE Computer Society Conference on Computer Vision and Pattern Recognition* (CVPR), Vancouver, British Columbia, June 18-22, 2023.
495. S. Saini, A. Saha, and A.C. Bovik, "HIDRO-VQA: High dynamic range oracle for video quality assessment," *IEEE/CVF WACV2024 3rd Workshop on Image/Video/Audio Quality in Computer Vision and Generative AI,* Waikoloa, Hawaii, January 4-8, 2024.
496. A. Venkataramanan and A.C. Bovik, "Quality modeling under a relaxed natural scene statistics model," *IEEE Southwest Symposium on Image Analysis and Interpretation,* Santa Fe, New Mexico, March 17-19, 2024.
497. H.E. Gedik, A. Venkataramanan, and A.C. Bovik, "Joint deep image restoration and unsupervised quality assessment," *IEEE Southwest Symposium on Image Analysis and Interpretation,* Santa Fe, New Mexico, March 17-19, 2024.
498. A.K. Venkataramanan, C. Stejerean, I. Katsavounidis, and A.C. Bovik, "A FUNQUE approach to the quality assessment of compressed HDR videos," *Picture Coding Symposium,* Taichung,

Taiwan, June 12-14, 2024.

499. K. Durbha, H. Tmar, I. Katsavounidis, and A.C. Bovik, "Bitrate ladder construction using visual information fidelity," *Picture Coding Symposium,* Taichung, Taiwan, June 12-14, 2024.
500. S. Mishra and A.C. Bovik, "C3DAG: Controlled 3D animal generation using 3D pose guidance," *IEEE Computer Society Workshop on AI for 3D Generation,* Seattle, Washington, June 17, 2024.
501. C.-H. Lee, M. Mandal, N. Birkbeck, Y. Wang, B. Adsumilli, and A.C. Bovik, "Subjective portrait region cropping on landscape video study," *IEEE International Conference on Image Processing,* Abu Dhabi, United Arab Emirates, October 27-30, 2024.
502. M. Mandal, N. Birkbeck, B. Adsumilli, and A.C. Bovik, "LEGIT: Text legibility for user-generated media," *IEEE International Conference on Image Processing,* Abu Dhabi, United Arab Emirates, October 27-30, 2024.
503. B. Chen, Z. Shang, J.W. Chung, D. Lerner, and A.C. Bovik, "A real-world satellite video subjective QoE database," *IEEE International Conference on Image Processing,* Abu Dhabi, United Arab Emirates, October 27-30, 2024.
504. S. Mishra, O. Saha, and A.C. Bovik, "YouDream: Generating anatomically controllable consistent text-to-3D animals," *Conference on Neural Information Processing Systems* (NeurIPS), Vancouver, Canada, December 9-15, 2024.
505. S.K. Pantapati, G. Phillips, and A.C. Bovik, "Lossy compression of triangle mesh geometry using neural displacement fields," *Conference of the European Association for Computer Graphics* (Eurographics), London, England, May 12-16, 2025.
506. A. Ghildyal, Y. Chen, S. Zadtootaghaj, N. Barman, and A.C. Bovik, "Quality assessment of AI-generated content: current status, challenges, and the road ahead," *ACM Mile High Video Conference,* Denver, Colorado, February 18-20, 2025.
507. A. Saha, Y.-C. Chen, J.-C. Bazin, C. Häne, I. Katsavounidis, A. Chapiro, and A.C. Bovik, "FaceExpressions-70k: A dataset of perceived expression differences," *ACM Special Interest Group on Computer Graphics and Interactive Techniques* (SIGGRAPH), August 10-14, 2025.
508. S. Saini, R.-L. Liao, Y. Ye, and A.C. Bovik, "LGDM: Latent guidance in diffusion models for perceptual evaluations," *International Conference on Machine Learning* (ICML), Vancouver, British Columbia, July 13-19, 2025.
509. S. Saini, S. Gupta, and A.C. Bovik, "Rectified CFG++ for flow based models," *IEEE CVPR Workshop on Generative Models for Computer Vision,* Nashville, Tennessee, June 11, 2025.
510. S.K. Pentapati, A. Rai, A. Ten, C. Atluru, and A.C. Bovik, "GEOSCALER: Geometry and rendering-aware downsampling of 3D mesh textures," *IEEE International Conference on Image Processing* (ICIP), Anchorage, Alaska, September 14-17, 2025.
511. R. Sureddi, S. Zadtootaghaj, N. Barman, and A.C. Bovik, "TRIQA: Image quality assessment by contrastive pretraining on ordered distortion triplets," *IEEE International Conference on Image Processing* (ICIP), Anchorage, Alaska, September 14-17, 2025.
512. S. Gupta, G. Phillips, and A.C. Bovik, "PIT-QMM: A large multimodal model for no-reference point cloud quality assessment," *IEEE International Conference on Image Processing* (ICIP), Anchorage, Alaska, September 14-17, 2025.
513. S. Saini, N. Birkbeck, Y. Wang, B. Adsumilli, and A.C. Bovik, "CHUG: Crowdsourced user-generated HDR video quality dataset," *IEEE International Conference on Image Processing* (ICIP), Anchorage, Alaska, September 14-17, 2025.
514. K.S. Durbha, A. Kumar Venkataramanan, R. Sureddi, and A.C. Bovik, "Perceptual classifiers: detecting generative images using perceptual features," *ICCV Workshop on Video Quality*

Assessment (VQA), Honolulu, Hawaii, October 19, 2025.

515. S. Mishra, O. Saha, and A.C. Bovik, "VidMP3: Video editing by representing motion with pose and position priors," *ICCV Workshop on Structural Priors for Vision* (SP4V), Honolulu, Hawaii, October 19, 2025.
516. B. Chen, C.-H. Lee, Y. Chen, Z. Shang, H. Wei, and A.C. Bovik, "A subjective video quality dataset for comparative evaluation of HDR and SDR," *Picture Coding Symposium,* Aachen, Germany, September 9-11, 2025.
517. S. Park, S.K. Pentapati, and A.C. Bovik, "3D Compression using DCT-based transform coding on rearranged gaussian splats," *Picture Coding Symposium,* Aachen, Germany, September 9-11, 2025.
518. S.K. Pentapati, G. Phillips, and A.C. Bovik, "Hierarchical neural surfaces for 3D mesh compression," *Picture Coding Symposium,* Aachen, Germany, September 9-11, 2025.
519. S. Saini, S. Gupta, and A.C. Bovik, "Rectified CFG++ for flow based models," *Conference on Neural Information Processing Systems* (NeurIPS), San Diego, December 2-7, 2025.
520. S. Saini, B. Chen, Y. Wang, N. Birkbeck, B. Adsumilli, and A.C. Bovik, "BrightRate: Quality assessment for user-generated HDR videos," *IEEE/CVW Winter Conference on Applications of Computer Vision*, Tucson, Arizona, March 6-10, 2026.
521. A. Ghildyal, R. Sureddi, N. Barman, S. Zadtootaghaj, and A.C. Bovik, "Non-aligned reference image quality assessment for novel view synthesis," *IEEE/CVW Winter Conference on Applications of Computer Vision*, Tucson, Arizona, March 6-10, 2026.
522. A.C. Bovik, "Me and ChatGPT: Making an image processing class demo suite," *IEEE Southwest Symposium on Image Analysis and Interpretation,* Santa Fe, New Mexico, March 22-24, 2026.
523. C.-H. Lee, B. Chen, N. Birkbeck, Y. Wang, B. Adsumilli, and A.C. Bovik, "Focused frames: Enhancing video quality assessment through perceptual pre-cropping," *ACM Mile High Video Conference,* Denver, Colorado, February 2-5, 2025.

Patents

1. A.C. Bovik and D. Chen, "Method and apparatus for visual pattern image coding," U.S. Patent Number 5,144,688, September 1, 1992.
2. A.C. Bovik, D. Chen and P.L. Silsbee, "Method and apparatus for coding both still and moving visual pattern images," U.S. Patent Number 5,282,255, January 25, 1994.
3. M.S. Sampat, A.C. Bovik, and M.K. Markey, "Method and apparatus for detecting spiculated masses in mammography," U.S. Patent Number 8,164,039, April 24, 2012.
4. S. Jahanbin, A.C. Bovik, E. Perez and D. Nair, "Detection of textural defects using a one class support vector machine," U.S. Patent Number 8,457,414, June 4, 2013.
5. A.K. Moorthy and A.C. Bovik, "Method and apparatus for assessing a quality of an image or video using a distortion classifier," U.S. Patent 8,660,372, February 25, 2014.
6. A.K. Moorthy and A.C. Bovik, "Maximizing perceptual quality and naturalness of captured images," U.S. Patent 9,277,148, March 1, 2016.
7. A.K. Moorthy and A.C. Bovik, "Determining quality of an image or video using a distortion classifier," U.S. Patent 9,595,090, March 14, 2017.
8. D. Ghadiyaram, J. Pan, and A.C. Bovik, "Predicting a viewer's quality of experience," U.S. Patent 10,182,097, January 15, 2019.
9. A.C. Bovik, C. Hunger, Z. Li, M. Crooks, M. Meserve, M. Mora and M. Webb, "Detecting and correcting whiteboard images while enabling the removal of the speaker," U.S. Patent

10,497,396, December 3, 2019.
10. A.C. Bovik, "Assessing quality of images or videos using a two-stage quality assessment," U.S. Patent 10,529,066, January 7, 2020.
11. T.R. Goodall and A.C. Bovik, "Classifying images and videos," U.S. Patent 10,657,378, May 19, 2020.
12. T.R. Goodall and A.C. Bovik, "Perceptual non-uniformity index," U.S. Patent 10,726,532, July 28, 2020.
13. A.C. Bovik, S. Kim, J.S. Park, C.G. Bampis and G.A. Dimakis, "Adversarial Video compression guided by soft edge detection," U.S. Patent 11,388,412, July 12, 2022.

Book Reviews and Other Articles

1. B.K.P. Horn, *Robot Vision.* MIT Press, Cambridge, MA, 1986 (book jacket).
2. T.J. Terrell, *Introduction to Digital Filters.* Wiley, New York, 1988, in *IEEE Circuits and Devices Magazine,* vol. 6, no. 5, p. 59, September 1990.
3. Professor Bovik was the subject of the article "Algorithm assesses image and video quality," by Andrew Wilson, *Vision Systems Design* October 2006, available online: http://vsd.pennnet.com/Articles/Article_Display.cfm?Section=ARTCL&ARTICLE_ID=274253&VERSION_NUM=2&p=19.
4. Professor Bovik's research on video quality was the subject of the article "HPC for your visual library: How algorithms and supercomputers assess video quality," *International Science Grid this Week,* July 2015, online: http://www.isgtw.org/feature/hpc-your-visual-library-how-algorithms-and-supercomputers-assess-video-quality.

Thesis and Dissertation

1. A.C. Bovik, "Nonlinear filtering using linear combinations of order statistics," Coordinated Science Laboratory Report R-935, University of Illinois, Urbana, IL, January 1982 (also M.S. Thesis).
2. A.C. Bovik, "Noise-robust methods for image restoration and edge detection," Ph.D. dissertation, University of Illinois, Urbana, IL, May 1984.

Keynote Addresses, Plenary Addresses, Distinguished Lectures, and Other Invited Talks

1. Invited Talk, "L-filters," 1985 College of Engineering Annual Research Review, The University of Texas at Austin, May 1985.
2. Invited Talk, "Detection of Object Boundaries in Synthetic Aperture Radar Imagery," University of Illinois Coordinated Science Laboratory, Urbana, Illinois, June 1985.
3. Invited Talk, "On the Information Content of Handprinted Characters," Texas Instruments Invited Presentation, Dallas, Texas, March 1986.
4. Invited Talk, "A Microcomputer-based Stereo Computer Vision System," 1986 College of Engineering Annual Research Review, The University of Texas at Austin, May 1986.
5. Invited Talk, "Efficient Recognition of Handprinted Characters," Texas Instruments Invited Presentation, Dallas, Texas, July 1986.
6. Invited Talk, "Three-dimensional Computer Vision: Goals and Methods," Central Texas IEEE Section and ASSP-COMSOC Chapter Invited Presentation, Austin, Texas, October 9, 1986.
7. Invited Talk, "A Microprocessor-based Handprinted Character Recognition System," Texas Instruments Invited Presentation, Dallas, Texas, February 1987.

8. Invited Talk, “An Image Processing and Computer Vision Instructional Laboratory,” IBM Corporation, Austin, Texas, May 1987.
9. Invited Talk, “Recognition of D'Nealian Script,” Texas Instruments Invited Presentation, Dallas, Texas, August 1987.
10. Invited Talk, “Image Processing and Computer Vision Research,” Motorola SABA Spring Meeting, Austin, Texas, April 1988.
11. Invited Talk, “Computational Texture Analysis Using Localized Spatial Filtering,” Brooks Air Force Base, San Antonio, Texas, June 1988.
12. Invited Talk, “Computer Vision,” University of Texas Electrical & Computer Engineering Visiting Committee, Austin, Texas, April 1989.
13. Invited Talk, “Three-dimensional Computer Vision,” Texas Instruments Invited Presentation, Dallas, Texas, June 1989.
14. Invited Talk, “CCD Image Processing,” Texas Instruments Invited Presentation, Dallas, Texas, February 1990.
15. Invited Talk, “Digital Image Processing - A Personal Overview,” IBM Seminar, Austin, Texas, April 1990.
16. Invited Talk, “Computer Vision for Three-dimensional Microscopy,” University of Liverpool, Quantitative Microscopy Group, Liverpool, England, February 1991.
17. Invited Talk, “Visual Pattern Image Sequence Coding,” NASA Johnson Space Center, Houston, Texas, May 1991.
18. Invited Talk, “Machine Vision Research in the Laboratory for Vision Systems,” Motorola Semiconductor, Phoenix, Arizona, July 1991.
19. Invited Talk, “Wavelet-based Image and Video Coding,” IBM Corporation, Austin, Texas, November 1991.
20. Invited Talk, “Local analysis of image frequencies,” Division of Applied Sciences, Harvard University, Cambridge, Massachusetts, April 1992.
21. Invited Talk, “Modulation Models for Image Processing and Multi-band Image Demodulation,” Texas Instruments Invited Presentation, Dallas, Texas, April 1993.
22. Invited Talk, “Active Vision Technology for a Semi-autonomous Rover,” NASA Johnson Space Center, Houston, Texas, May 1993.
23. Invited Talk, “The Practical Application of Active Focus Control for Depth Recovery,” NASA Johnson Space Center, Houston, Texas, April 1994.
24. Invited Talk, “FOVEA: A Foveated Vergent Active Stereo System,” Center for Vision and Image Sciences, The University of Texas at Austin, Austin, Texas, May 1996.
25. Invited Talk, “An Algebraic Approach to Multi-frame Blind Image Deconvolution,” Phillips Research Laboratory, Kirtland Air Force Base, Albuquerque, New Mexico, November 19, 1996.
26. Invited Talk, “AM-FM Image Models,” Phillips Research Laboratory, Kirtland Air Force Base, Albuquerque, New Mexico, November 19, 1996.
27. Invited Talk, “AM-FM Image Analysis,” US Army Research Office First Annual Center for Imaging Science Review, Washington University, St. Louis, Missouri, January 17, 1997.
28. Invited Talk, “Image Analysis Research at UT-Austin,” Phillips Research Laboratory, Kirtland Air Force Base, Albuquerque, New Mexico, June 26, 1997.
29. Invited Talk, “AM-FM Image Models and Applications,” CICSR Distinguished Lecture Series, The University of British Columbia, Vancouver, March 18, 1999.
30. Invited Talk, “AM-FM Image Models and Applications,” Signal and Image Processing

Seminar Series, The University of Texas, Austin, April 23, 1999.

31. Invited Talk, "Observations on Video Compression and a Demonstration of Video Quality Assessment," Video Services Forum, Bell Atlantic Corporation, New York City, May 5, 1999.
32. Invited Talk, "Teaching Digital Image and Video Processing Using Labview," National Instruments Labview Conference, Austin, Texas, August 1999.
33. Invited Talk, "Foveated Visual Communications," Department of Electrical and Computer Engineering Visiting Committee, The University of Texas at Austin, November 1999.
34. Invited Talk, "AM-FM Models: New Image Representations for Multimedia Applications," The American College, Madurai, India, August 2000.
35. **Plenary Speaker**, "AM-FM Models: New Image Representations for Multimedia Applications," *International Conference on Multimedia Processing and Systems,* Madras, India, August 14, 2000.
36. **Texas A&M Distinguished Lecture Series**, "AM-FM Models: New Image Representations," Texas A&M University, College Station, Texas, November 10, 2000.
37. **IEEE Signal Processing Society Distinguished Lecture**: "AM-FM Models: New Image Representations," Howard University, Washington, DC, March 30, 2001.
38. **IEEE Signal Processing Society Distinguished Lecture**: "AM-FM Models: New Image Representations," Washington State University, Pullman, Washington, April 6, 2001.
39. **IEEE Signal Processing Society Distinguished Lecture**: "AM-FM Models: New Image Representations," Rochester Institute of Technology, Rochester, NY, June 14, 2001.
40. **Distinguished Lecture**: "AM-FM Models: New Image Representations," Rose-Hulman Institute of Technology, Terre-Haute, Indiana, March 23, 2002.
41. Invited Lecture: "Using Visual Attention in Video Processing and Communication," The Colorado School of Mines, Golden, Colorado, July 2002.
42. Invited Lecture: "Using Visual Attention in Video Processing and Communication," The Indian Institute of Technology, Chennai, Tamilnadu, India, January 2003.
43. Invited Lecture: "Image Quality Assessment: From Error Measurement to Structural Similarity," The Indian Institute of Technology, Chennai, Tamilnadu, India, January 2003.
44. Invited Talk, Quality Monitoring for Video Services over Networks, Time-Warner Corporation, Austin, Texas, March 2003.
44. Invited Lecture: "Using Visual Attention in Video Processing and Communication," The University of Virginia, Charlottesville, Virginia, April 2003.
45. **Plenary Speaker**, "Attention-Grabbing Image Processing," *IEEE Southwest Symposium on Image Analysis and Interpretation,* Lake Tahoe, Nevada, March 28-30, 2004.
52. **Plenary Speaker**, "Teaching Image and Video Processing Using Labview," *National Instruments NI Week,* Austin, Texas, June 2004.
54. Invited Lecture, "Gabor Spiculation Filters for the Detection of Spiculated Masses in Digital Mammograms," *Annual Conference, UT Center for Biomedical Engineering and UT Department for Biomedical Engineering,* Houston, Texas, December 6-7, 2004.
55. Guest Lecturer, "Digital Image and Video Processing," *UT Honors Colloquiem,* Austin, Texas, July 22, 2005.
56. Keynote Speaker, "New Measures for Image and Video Quality Assessment," *Twelfth Annual Worldwide Virtual Instrumentation Conference and Exhibition,* Austin Convention Center, Austin, Texas**,** August 9, 2006.
57. **Distinguished Lecture**, "Evidence-Based Detection of Spiculated Lesions," Distinguished Lecturers Seminar, Computer Science Department, The University of Houston, Houston,

Texas, September 29, 2006.

58. Invited Talk, "Next Generation Video Coding and Image/Video Quality Assessment Algorithms," *AT&T Labs University Collaboration Symposium,* Shannon Laboratory, Florham Park, New Jersey, August 3-4, 2006.
59. Invited Talk, "Towards Video Surveillance," *Freescale Semiconductor Corporation,* Austin, Texas, January 26, 2007.
60. **Keynote Speaker**, "New Vistas in Image and Video Quality," *SPIE Human Vision and Electronic Imaging Conference,* San Jose, California, January 29-February 1, 2007.
61. Invited Talk, "On Image Quality Assessment," *National Instruments Corporation,* Austin, Texas, February 7, 2007.
62. Invited Talk, "State of the Art of Image and Video Quality Assessment," *Freescale Semiconductor Corporation,* Austin, Texas, May 15, 2007.
64. Invited Talk, "Wireless Video Surveillance," *Freescale Semiconductor Corporation,* Austin, Texas, June, 2007.
65. Invited Talk, "Object Tracking in Video Surveillance," *Freescale Semiconductor Corporation,* Austin, Texas, August 7, 2007.
66. **Plenary Talk**, "New Directions in Image and Video Quality Assessment," *IEEE Signal Processing Society International Workshop on Multimedia Signal Processing,* Chania, Crete, Greece, October 1-3, 2007.
67. **Plenary Talk**, "Image and Video Quality on Wireless Networks," *Texas Wireless Symposium,* Austin, Texas October 18, 2007.
68. **Plenary Talk**, "Analyzing Image Quality," *IEEE Southwest Symposium on Image Analysis and Interpretation,* Santa Fe, New Mexico, March 24-27, 2008.
69. Invited Talk, "Assessment of Range Image Quality by Structural Similarity," *21st Century Technology,* Austin, Texas, October 23, 2007.
70. **Plenary Talk**, "Video Quality and Video Databases," *First IEEE International Workshop on IP Multimedia Communications,* Virgin Islands, USA, August 4-7, 2008.
71. **Beckman Institute Distinguished Lecture**, "Light on Video Quality," The University of Illinois, September 5, 2008.
72. **Azriel Rosenfeld Distinguished Lecture**, "MOVIE Index for Video Quality Assessment," The University of Maryland, October 3, 2008.
73. **Plenary Talk**, "Quality is in the Eye of the Beholder," *IEEE International Conference on Image Processing,* San Diego, California, October 15, 2008.
74. **Plenary Talk**, "Video Quality Assessment," *IEEE Region 10 Conference (TENCON)*, Hyderabad, India, November 18-21, 2008.
75. Invited Talk, "Video Quality Metrics and their Applications," *Texas Instruments, Inc.,* Dallas, Texas, February 9, 2009.
76. **Distinguished Lecture**, "Quality is in the Eye of the Beholder," Center for Perceptual Systems, The University of Texas at Austin, March 9, 2009.
77. Invited Lecture, "Quality is in the Eye of the Beholder," *Video Services Forum,* Montreal, Canada, May 6, 2009.
78. Panelist, "Tools, Targets and Trends," *First International Workshop on Quality of Multimedia Experience,* San Diego, California, July 30, 2009.
79. Invited Talk, "Visual Quality Assessment: Past, Present, and Future," *Siemens Corporate Research,* Princeton, New Jersey, May 2010.
80. **Plenary Address**, "Visual Quality: Seeing the Future," *IEEE Southwest Symposium on Image*

Analysis and Interpretation, Austin, Texas, May 2010.

81. **Inaugural Plenary Address**, "Blind Image Quality Assessment is Not Impossible," *First Optical Society of America Topical Meeting on Digital Image Processing and Analysis* (*DIPA*), Tucson, AZ, June 2010.
82. Invited Talk, "Visual Quality Assessment: Seeing the Future," *Texas Instruments, Inc.,* Dallas, Texas, June 2010.
83. **Keynote Address**, "Similarity Measurements for Space Time and 3D Visual Quality Assessment and Inspection," *National Instruments NI Week Vision Summit,* August 2010.
84. Invited Talk, "Automatic Video Quality Agents for Digital Video Network Monitoring," *Advanced Micro Devices, Inc.,* August 2010.
85. Invited Talk, "Automatic Video Quality Agents for Digital Video Network Monitoring," *Cisco Systems, Inc.,* September 2010.
86. Invited Talk, "Automatic Monitoring of Video Networks by Blind Video Quality Agents," *3M Corporation,* October 2010.
87. **Plenary Address**, "New Dimensions in Visual Quality," *IS&T/SPIE Symposium on Electronic Imaging,* January 2011.
88. **Keynote Address**, "Perceiving Distortions in Visual Signals," *European Workshop on Visual Computing,* Paris, France, July 2011.
89. Invited Talk, "Review of Recent Results on VQA," Cisco Corporation, San Jose, California, October 2011.
90. **Keynote Address**, "Blind Visual Quality Estimation Models: Flavors, Assumptions and Performance," *IEEE Southwest Symposium on Image Analysis and Interpretation,* Santa Fe, New Mexico, April 2012.
91. Invited Talk, "Visual Quality Estimation: How Blind is Blind?," Texas Instruments, Inc., Dallas, Texas, April 2012.
92. **Plenary Address**, "Image Quality Assessment: How Blind is Blind?," *Optical Society of America Meeting on Computational Optical Sensing and Imaging,* Monterrey, California, June 25, 2012.
93. **Keynote Address**, "Natural Scene Statistics and the Perception of Visual Distortion," *Workshop on Digital Video Analytics and Processing,* IIT-Chennai, Chennai, India, December 2012.
94. Invited Talk, "Video Quality Assessment Research," Intel and Cisco Corporations, via Webex, July 2012.
95. **Keynote Address**, "Quality Assessment of Mobile Video," *International Workshop on Video Processing and Quality Metrics for Consumer Electronics,* Scottsdale, Arizona, January, 2013.
96. Invited Talk, "Natural Scene Statistics, the Perception of Visual Distortion, and Visual Tasking," National Institute for Standards and Technology (NIST), October, 2012.
97. **Distinguished Lecture**, "Perceptual Monitoring of Wireless Video Networks," Northwestern University, Evanston, Illinois, April 2013.
98. **Keynote Address**, "Perspectives on Natural 3D Statistics," *IEEE Signal Processing Society Workshop on Image, Video, and Multidimensional Signal Processing,* Seoul, Korea, June 2013.
99. **Distinguished Lecture**, "Natural Scene Statistics and the Perception of Visual Distortion," Chung-Ang University, Seoul, Korea, June 2013.
100. Invited Talk, "Perceptual Monitoring of Wireless Video Networks," Qualcomm Corp, San Diego, California, August 2013.

101. **Keynote Address,** "Perceptual Tools for Quality-Aware Video Networks," *SPIE Conference on Image Quality and System Performance,* San Francisco, California, January 2014.
102. Invited Talk, "Wireless Video Quality Assessment," *Cisco Corporation,* via Webex, January 2014.
103. Invited Talk, "Three Years of Wireless Video Quality Research," *Intel Corporation,* Santa Clara,, California, January 2014.
104. **Plenary Address,** "Tasking on Natural 3D Statistics," IEEE Southwest Symposium on Image Analysis and Interpretation, San Diego, California, April 2014.
105. Eminent Speaker, "Natural Scene Statistics and the Perception of Visual Distortion," University of Virginia, Charlottesville, Virginia, April 2014.
106. **Keynote Address**, "Tasking on Natural Image and Video Statistics," *Second IEEE Global Conference on Signal and Information Processing,* Atlanta, Georgia, December 2014.
107. **Keynote Address**, "Tasking on the Natural Statistics of Pictures and Videos,"*Eighth International Conference on Image and Graphics* (ICIG), Tianjin, China, August 2015.
108. **Plenary Address,** "Behavior and Video Quality," *IEEE Southwest Symposium on Image Analysis and Interpretation,* Santa Fe, New Mexico, March 2016.
109. Invited Talk, "Tasking on the Natural Statistics of Pictures and Videos," Department of Engineering, Beijing University of Technology, Beijing, China, August 2015.
110. **Distinguished Lecture**, "Natural Scene Statistics and the Perception of Visual Distortion," Department of Electrical and Computer Engineering, The University of Texas at Austin, August 2015.
111. **Plenary Address, "**New Challenges for Image Quality: A New Database and a New Modality**,"** *IEEE Southwest Symposium on Image Analysis and Interpretation,* Santa Fe, New Mexico, March 2016.
112. Invited Talk, "Don't Mess with My Picture Statistics," *Peli Fest, a Festschrift in honor of Eli Peli,* Scherpens Eye Institute, Boston, Massachusetts, June 17, 2016.
113. **Keynote Address,** "Leave my Picture Statistics Alone," Thomas Huang Symposium, The Beckman Institute, Urbana, Illinois, October 1, 2016.
114. **Keynote Address**, "Advances in Picture Quality: Vision Science and Algorithms," *IEEE International Workshop on Signal Processing Systems,* Dallas, Texas, October 26-28, 2016**.**
115. Invited Talk, "Perceptual Issues of Streaming Video (and How to Solve Them)," Huawei Strategy and Technology Workshop, Shenzhen, China, May 16, 2017.
116. Invited Talk, "Perceptual Issues of Streaming Video," SID Display Week, Los Angeles, California, May 26, 2017.
117. **Keynote Address,** "Perceptual Issues of Streaming Video (and How to Solve Them)," *International Conference on Computer Analysis of Images and Patterns,* Ystad, Sweden, August 2017.
118. Distinguished Lecture, "Natural Scene Statistics and the Perception of Visual Distortion," Linkoping University, Linkoping, Sweden, August 2017.
119. Invited Talk, "Natural Scene Statistics and the Perception of Visual Distortion," Department of Statistics, The University of Texas at Austin, Austin Texas, October 2017.
120. Invited Talk, "Picture Quality: Neuroscience Meets Video Engineering," Department of Neuroscience, The University of Texas at Austin, Austin Texas, November 2017.
121. **Plenary Address,** "The 'Ins' and 'Outs' of Perceptual Streaming Video," *IEEE Southwest Symposium on Image Analysis and Interpretation,* Las Vegas, Nevada, April 2018.
122. Invited Talk, "Peculiarities of a Picture Quality Predictor," *Chellappa 65 Symposium,* June 4,

2018.

123. **Keynote Address,** "Perception is Everything," *Picture Quality Symposium,* San Francisco, California, June 2018.
124. **Keynote Address,** "Consciousness of Stream: Perceptually Optimizing Global Video Quality," *European Workshop on Visual Information Processing (EUVIP),* Tampere, Finland, November 2018.
125. Distinguished Lecture, "The Beginning and the End of Streaming (Quality)," The University of California at Riverside, Riverside, California, January 2019.
126. **Keynote Address,** "Consciousness of Streaming (Quality)," *SPIE Conference on Image Quality and System Performance,* San Francisco, California, January 2019.
127. Invited Talk, "Towards Blind Video Quality Prediction," Facebook Research, Menlo Park, California, January 2019.
128. Invited Talk, "Predicting UGC Video Quality," YouTube, Mountain View, California, January 2019.
129. Invited Talk, "Blind Streaming Video Quality," U.S. Army Night Vision Laboratory, Austin, Texas. January 2019.
130. Distinguished Lecture, "Streaming Video Quality from Start to Finish," Johns Hopkins University, Baltimore, Maryland, March 26, 2019.
131. Distinguished Lecture, "Don't Mess with My Picture Statistics!," University of Houston, Houston, Texas, April 9, 2019.
132. Invited Talk, "Starting and Finishing Streaming Quality," Amazon Prime Video, Seattle, Washington, April 19, 2019.
133. **Plenary Address,** "A Deeper Look at Picture Quality," *IEEE Southwest Symposium on Image Analysis and Interpretation,* Santa Fe, New Mexico, March 2020.
134. **Keynote Address,** "Speeding it Up: Perception of High-Frame Rate Videos," *First Workshop on Aesthetic and Technical Quality Assessment of Multimedia* (ATQAM 2020), *ACM Multimedia,* October 2020.
135. **Keynote Address,** "Compressed Video Frame Rate vs Perceptual Quality: Subjective and Objective Studies," *Conference on Graphics, Patterns and Images (SIBGRAPI),* Porto de Galinhas, Brazil, November 2020.
136. Invited Talk, "Natural Scene Statistics and the Perception of Visual Distortion, Amazon Prime Video Algorithms and Science Team, Seattle, Washington, October 30, 2020.
137. Invited Talk, "A Hitchhiker's Guide …. to SSIM!," Alliance for Open Media (Virtual), California, December 4, 2020.
138. Invited Talk, "A Hitchhiker's Guide …. to SSIM!," Video Quality Experts Group (Virtual), December 18, 2020.
139. **Keynote Address**, "Here Comes Even More Video Data! High Frame Rates, Compression, and Video Quality," *IEEE Annual Computing and Communication Workshop and Conference,* Virtual Conference, January 2021.
140. Distinguished Lecture, "Faster and Faster! Perceiving High Frame Rate Videos," The University of Houston, February, 2021.
141. Distinguished Lecture, "Why is Video Quality Prediction So Hard?" Machine Learning Laboratory, The University of Texas at Austin, March 2021.
142. **Keynote Address,** "User-Generated Video Quality Prediction: From Local to Global," *Data Compression Conference,* Snowbird, Utah, March 2021.
143. **Keynote Address,** "Getting High on Frame Rates," *IEEE CVPR Workshop on New Trends in*

Image Restoration and Enhancement, June 19, 2021.

144. **Keynote Address,** "Changing Frame Rates and Video Quality," *IEEE International Conference on Multimedia and Expo,* July 5, 2021.
145. **Keynote Address,** "Getting High on Frame Rates," *Amazon Workshop on Image and Video Quality,* July 2021.
146. **Keynote Address,** "Predicting the Quality of Foveated Compressed Videos in VR," *Y-BASE AI Symposium, Yonsei University, Seoul, Korea,* October 2021.
147. **Keynote Address,** "Predicting the Quality of Pictures Beyond the Visible Spectrum," *IEEE CVPR Workshop on Perception Beyond the Visible Spectrum,* June 19, 2022.
148. Invited Talk, "Practical Video Quality Prediction: Video Engineering Meets Neuroscience," Trinity College, Dublin, Ireland, March 21, 2023.
149. Invited Talk, "Towards Perceptually Optimized XR Compression," *6G@UT Symposium,* The University of Texas at Austin, March 31, 2023.
150. Invited Talk, "Is Video Quality Prediction Really So Hard?," *The Gathering of Eagles,* invited talks by select NAE members, The Hagler Institute for Advanced Studies, Texas A&M University, College Station, Texas, April 28, 2023.
151. **Keynote Address,** "Video Quality: A Nexus of Video Engineering and Visual Neuroscience," *ACM Mile High Video Event,* Denver, Colorado, May 8, 2023.
152. **Distinguished Lecture,** "Secrets of Video Quality," Purdue University, October 19, 2023.
153. **Keynote Address, "**Visual Quality in the Era of Bigger, Faster, and Deeper Videos," *Southwest Symposium on Image Analysis and Interpretation,* Santa Fe, New Mexico, April 2024.
154. **Distinguished Lecture,** "Secrets of Video Quality," University of Colorado, April 22, 2024.
155. **Invited Talk,** "On the Visual Quality of Pictures, Videos, and Games," Sony Interactive Entertainment, Menlo Park, California, June 13, 2024.
156. **Keynote Address,** "On the Visual Quality of Pictures, Games, and GenAI," *IEEE/CVF CVPR Workshop on Vision, Graphics, and AI for Streaming,* Seattle, Washington, June 17, 2024.
157. **Distinguished Lecture,** "Secrets of Video Quality," *Indian Institute of Science,(*IISc*),* Bangalore, Karnataka, India, December 12, 2024.
158. **Keynote Address,** "On Visual Quality: Pictures, Videos, and GenAI," *Indian Conference on Computer Vision, Graphics and Image Processing,* IIIT-Bangalore, December 13-15, 2024.
159. **Invited Lecture,** "On Visual Quality: Pictures, Videos, and GenAI," Nvidia (virtual) January 6, 2025.
160. **Keynote Address,** *International Conference on Computing, Networking and Communications,* Honolulu, Hawaii, February 17-20, 2025.

Short Courses

1. "Digital Image Processing - A First Course," IBM Corporation, Austin, Texas, September 10-21, 1990.
2. "Machine Vision in Manufacturing," Instituto Tecnologico de Monterrey, Mexico City, January 5-9, 1992.
3. "Digital Image Processing," IBM Corporation, Austin, Texas, Fall 1992.
4. "Digital Image Processing," IBM Corporation, Austin, Texas, Fall 1994.
5. "Introduction to Digital Image Processing," Texas Instruments, Inc., Dallas, Texas, Winter 1995.
6. "Introduction to Digital Image Processing," Texas Instruments, Inc., Dallas, Texas, Spring

1995.

7. "Introduction to Digital Image Processing," Texas Instruments, Inc., Dallas, Texas, Summer 1995.
8. "Introduction to Digital Image Processing," Texas Instruments, Inc., Dallas, Texas, Fall 1995.
9. "Digital Signal Processing Theory," Texas Instruments, Inc., Dallas, Texas, Fall 1995.
10. "Digital Signal Processing Theory," Texas Instruments, Inc., Dallas, Texas, Winter 1996.
11. "Digital Image and Video Processing," Texas Instruments, Inc., Dallas, Texas, Spring 1996.
12. "Digital Image and Video Processing," Texas Instruments, Inc., Dallas, Texas, Summer 1996.
13. "Digital Signal Processing Theory," Texas Instruments, Inc., Dallas, Texas, Fall 1996.
14. "Digital Image and Video Processing," Texas Instruments, Inc., Dallas, Texas, Fall 1996.
15. "Digital Image and Video Processing," Texas Instruments, Inc., Dallas, Texas, Spring 1997.
16. "Digital Image and Video Processing," Texas Instruments, Inc., Dallas, Texas, Spring 1997.
17. "Digital Signal Processing Theory," Texas Instruments, Inc., Dallas, Texas, Spring 1997.
18. "Digital Signal Processing Theory," Raytheon Systems, Dallas, Texas, Fall 1997.
19. "Digital Image and Video Processing," Raytheon Systems, Dallas, Texas, Fall 1997.
20. "Digital Image and Video Processing," Raytheon Systems, Dallas, Texas, Spring 1998.
21. Tutorial: "Image and Video Compression," *International Conference on Multimedia Processing and Systems,* Madras, India, August 13-15, 2000.
22. "Digital Image and Video Processing." Xilinx Corporation, San Jose, California, Fall 2005.
23. Tutorial: "Visual Perception and Image Processing," *IEEE Region 10 Conference* (*TENCON*), Hyderabad, India, November 18-21, 2008.
24. Tutorial: "Image Quality Assessment: Not So SSIMple," *NIP: International Conference on Digital Printing Technologies,* Austin Texas, September 19-23, 2010.

Grants and Contracts Received

State and Federal Grants

1. "Analysis and reconstruction of three-dimensional microscopic images," National Science Foundation, $264,000 (Co-Principal Investigator), 1986-1988.
2. "Computer research into multiprocessing systems via hypercube architecture," National Science Foundation, $70,000 (Investigator), 1986-1987.
3. "Research into three-dimensional computer vision and sensor integration: Texture, color, and stereopsis," Texas Advanced Research Program, $293,603 (Principal Investigator), 1988-1990.
4. "Laser scanning microscope for three-dimensional microscopy," National Science Foundation, $75,000 (Co-Principal Investigator), 1989-1990.
5. "Animated computer vision technology," Texas Advanced Technology Program, $102,720 (Principal Investigator), 1989-1991.
6. "Very fast high-compression image sequence coding using simple spatio-temporal image patterns," National Aeronautics and Space Administration (NASA), $57,407 (Principal Investigator), 1990-1991.
7. "Numerical instrumentation for shape and shape change analysis via three-dimensional microscopy," National Science Foundation, $450,000 (Co-Principal Investigator), 1991-1994.
8. "Local spatio-temporal analysis in vision systems," Air Force Office of Scientific Research, $3,200,000 (Co-Principal Investigator), 1993-1996.
9. "Animated computer vision technology for a semi-autonomous rover," National Aeronautics and Space Administration (NASA), $64,108 (Principal Investigator), 1993-1994.

10. “High speed video coding and communication,” Texas Advanced Technology Program, $189,026 (Principal Investigator), 1993-1995.
11. “Multiresolution information archival and analysis system,” National Aeronautics and Space Administration (NASA), $750,000 (Co-Principal Investigator), 1994-1997.
12. “Scalable processing of multi-sensor and multi-spectral imagery,” Phillips Air Force Base, $60,000 (Co-Principal Investigator), 1994-1995.
13. “A research center in the scientific foundations of image representation and analysis,” Army Research Office, $650,000 (UT-Austin portion of $4.5 Million divided among the Army Center for Imaging Science: Washington University, Harvard University, MIT and UT-Austin) (Investigator), 1995-2000.
14. “3-D analysis of microvessel angiogenesis via laser scanning confocal microscopy,” Texas Advanced Research Program, $201,250 (Co-Principal Investigator), 1995-1997.
15. “Image processing and data compression tools for satellite imaging,” Phillips Air Force Base by subcontract through Schafer Associates, $69,969 (Co-Principal Investigator), 1996-1997.
16. “AM-FM analysis of images and video,” Air Force Office of Scientific Research, $114,351 (Principal Investigator), 1997-2000.
17. “Foveated wireless video communication,” Texas Advanced Technology Program, $198,700 (Principal Investigator), 1999-2001.
18. “Computer vision systems for automatic target recognition and automatic recognition of human activities,” Army Research Office (2/3) and UT-Austin matching funds (1/3), $150,000 (Co-Principal Investigator), 2000-2001.
19. "New models of low-level visual search and applications to robotic vision, detection, and data mining,” Texas Advanced Research Program, $143,950 (Co-Principal Investigator), 2001-2003.
20. “Active stereoscopic visual search driven by natural scene statistics,” National Science Foundation, $250,000 (Principal Investigator), 2002-2005.
21. “Gabor spiculation filters for the detection of spiculated masses in digital mammograms,” The Whitaker Foundation, $20,000 (Principal Investigator), 2002-2003.
22. “Blind image and video quality assessment using natural scene statistics,” National Science Foundation, $250,000 (Principal Investigator), 2003-2006.
23. “High-speed multimedia transmission for space-time communication systems,” Texas Advanced Technology Program, $145,000 (Co-Principal Investigator), 2004-2005.
24. “Detection of spiculated masses and architectural distortions in digitized mammograms,” Department of Defense US Army Medical Research and Materiel Command, $90,000 (Principal Investigator), 2004-2007.
25. “Foundations of Visual Search,” National Science Foundation, $1,200,000 (Principal Investigator), 2004-2010.
26. “Vehicle Structure Recovery from a Moving Air Platform,” Air Force Office of Strategic Research, Subcontract from 21 Technologies, Inc, $32,000 (Principal Investigator), 2005-2006.
27. “Passive Optical Modeling,” Air Force Office of Strategic Research, Subcontract from 21 Technologies, Inc, $292,000 (Co-Principal Investigator), 2006-2008.
28. “Quality Assessment of Natural Videos,” National Science Foundation, $272,764 (Principal Investigator), 2007-2010.
29. “High-Definition and Immersive Acquisition, Processing, and Display Equipment for Video Processing and Vision Science Research and Education,” National Science Foundation,

$205,912 (Principal Investigator), 2009-2011.

30. "Statistical Measurement, Modeling, and Inference on Natural 3D Scenes," National Science Foundation, $496,614 (Co-Principal Investigator), 2009-2012.
31. "RFCode: Robust Foveated Encoding," Air Force Office of Strategic Research, Subcontract from 21 Technologies, Inc, $255,460 (Co-Principal Investigator), 2010-2012.
32. "Computer-Aided Detection of Breast Cancer," Texas Ignition Fund, $50,000 (Co-Principal Investigator, ACB = $25,000), 2010.
33. "Foveated Compression, Tracking and Search in Very Large Format Videos," Lawrence Livermore National Laboratory, $60,000 (Principal Investigator, ACB = $60,000), 2011.
34. "Intelligent Autonomous Video Quality Agents," National Science Foundation, $499,944 (Principal Investigator, ACB = $249,972), 2011-2014.
35. "Foveated Compression, Tracking and Search in Very Large Format Videos II," Lawrence Livermore National Laboratory, $60,000 (Principal Investigator, ACB = $60,000), 2012.
36. "Enhancement of Foggy Images," Korea Association of Industry, Academy, and Research Institute (KAIARI), subcontract via Hongik University, $78,000 (Principal Investigator, ACB = $78,000), 2012-2014.
37. "Objective Evaluation of the Effect of Image Quality on Visual Tasks," National Institute of Standards and Technologies (NIST), $50,000 (Principal Investigator, ACB = $50,000), 2012-2013.
38. "Objective Evaluation of the Effect of Image Quality on Visual Tasks, Phase 2" National Institute of Standards and Technologies (NIST), $75,000 (Principal Investigator, ACB = $75,000), 2013-2014.
39. "Objective Evaluation of the Effect of Image Quality on Visual Tasks, Phase 3" National Institute of Standards and Technologies (NIST), $80,000 (Principal Investigator, ACB = $80,000), 2014-2015.
40. "Tasking on Natural Image Statistics: 2D and 3D Object and Category Detection in the Wild," National Science Foundation, $441,933 (Principal Investigator, ACB = $441,933), 2015-2019.
41. "Perception-Driven Technical Performance Evaluation of the Capabilities of Imagers," National Institute of Standards and Technologies (NIST), $596,610 (Principal Investigator, ACB = $596,610), 2015-2021.
42. "NSF National AI Institute on Machine Learning," National Science Foundation, $20,000,000 (Co-Principal Investigator, ACB = $1,000,000), 2020-2025.
43. "Studies of the Perceptual Quality of American Sign Language (ASL) Videos," Department of Commerce, National Telecommunications and Information Administration, $255,304 (Principal Investigator, ACB = $255,304), 2022-2023.

Industrial Grants

1. "A Stereo Computer Vision Laboratory," IBM Corporation, 2 IBM PC/AT personal computers, peripheral equipment, and software, $50,000 commercial value (Principal Investigator), 1984.
2. "Handprinted Character Recognition," Texas Instruments Research Grant, $20,000 (Principal Investigator), 1985-1986.
3. "A Stereo Computer Vision Laboratory - Update," IBM Corporation, 2 IBM RT PC personal computers, peripheral equipment, and software, $125,000 commercial value (Principal Investigator), 1986-1987.
4. "Handprinted Character Recognition II," Texas Instruments Research Grant, $35,000

(Principal Investigator), 1986-1987.

5. "An Image Processing and Computer Vision Instructional Laboratory," IBM Corporation, 8 IBM RT PC personal computers, peripheral equipment, and software, $400,000 commercial value (Principal Investigator), 1986-1987.
6. "Computer Equipment for Handprinted Character Recognition," TI Personal Computer, software, and peripherals, Texas Instruments, retail value $6616, (Principal Investigator), 1987-1988.
7. "Handprinted Character Recognition III," Texas Instruments Research Grant, $50,000 (Principal Investigator), 1987-1988.
8. "Three-dimensional Computer Vision," Texas Instruments Research Grant, $45,000 (Principal Investigator), 1988-1989.
9. "CCD Image Processing," Texas Instruments Research Grant, $40,000 (Principal Investigator), 1989-1990.
10. "Computing Shape Changes in Three-Dimensional Confocal Microscope Images," Cray Research Incorporated University Research & Development Grant Program, $42,000, (Principal Investigator) 1990-1991.
11. "Automated 3-D Inspection of RF Power Transistor Assemblies," Motorola University Partnerships in Research Program, $24,700 (Principal Investigator), 1990-1991.
12. "CCD image processing II," Texas Instruments Research Grant, $45,000 (Principal Investigator), 1990-1991.
13. "Automated 3-D Iinspection of RF Power Transistor Assemblies II," Motorola University Partnerships in Research Program, $25,000 (Principal Investigator), 1991-1992.
14. "Integrating Visual and Acoustic Cues for Automatic Speech Recognition," Motorola DSP University Support Program, equipment, retail value $6,204 (Principal Investigator), 1991-1992.
15. "Integrating Visual and Acoustic Cues for Automatic Speech Recognition," Motorola DSP University Support Program, equipment, retail value $4,604 (Principal Investigator), 1991-1992.
16. "Automated 3-D Inspection of RF Power Transistor Assemblies III," Motorola University Partnerships in Research Program, $25,000 (Principal Investigator), 1992-1993.
17. "Wavelet-based Image/video Coding and Code Conversion," IBM Corporation, $70,000 (Principal Investigator), 1992-1993.
18. "Wavelets and Applications to Multiscale Signal Analysis," Texas Instruments Research Grant, $18,000 (Principal Investigator), 1992-1993.
19. "Automated 3-D Inspection of RF Power Transistor Assemblies IV," Motorola University Partnerships in Research Program, $12,000 (Principal Investigator), 1993-1994.
20. "High Performance Compression Technologies for High-Speed Workstation-To-Workstation Video Transmission," IBM Corporation, 1 IBM RS/6000 Power PC engineering workstation, peripheral equipment and software, $20,000 commercial value (Principal Investigator), 1994-1995.
21. "Digital Signal and Image Processing," Unrestricted Research Grant, Schlumberger Austin Research, $25,000 (Principal Investigator), 1994-1995.
22. "Digital Image Processing for FLIR," Unrestricted Research Grant, Texas Instruments, Inc., $35,000 (Principal Investigator), 1995-1996.
23. "Use of a Macintosh and Quicktake Camera for Image Processing in the Classroom to Aid Student Understanding," Apple Computer Corporation, one PowerMac 7200 engineering

workstation, peripheral equipment, and software, $15,000 commercial value (Principal Investigator), 1996

24. “Digital Image Analysis,” Unrestricted Research Grant, Texas Instruments, Inc., $45,000 (Principal Investigator), 1996-1997.
25. “Digital Video Quality Assessment,” Unrestricted Research Grant, Southwestern Bell Telephone Company, $35,000 (Principal Investigator), 1996-1997.
26. "Digital Image Analysis,” Unrestricted Research Grant, Texas Instruments, Inc., $20,000 (Principal Investigator), 1997-1998.
27. "Digital Video Telecommunications Research and Teaching in the Laboratory for Image and Video Engineering (LIVE)," Intel Corporation, Equipment grant, cluster of Pentium NT workstations, $250,000 (Principal Investigator), 1997-2000.
28. "Image Halftoning Research," Unrestricted Research Grant, Hewlett-Packard Laboratories, Palo Alto, CA, $15,000 (Co-Principal Investigator), 1997-1998.
29. "Digital Video Quality Assessment II,” Unrestricted Research Grant, Southwestern Bell Telephone Company, $30,000 (Principal Investigator), 1997-1998.
30. "Wireless Video on the HomeBus," Motorola Semiconductor Products Sector, $35,000 (Principal Investigator), 1997-1998.
31. "Digital Image Analysis," Unrestricted Research Grant, Raytheon Systems, $38,000 (Principal Investigator), 1998-1999.
32. "Digital Image Analysis," Unrestricted Research Grant, Raytheon Systems, $23,000 (Principal Investigator), 1999-2000.
33. "Objective Quality Assessment for High Quality Digital Video," Unrestricted Research Grant, Southwestern Bell Telephone Company, $30,000 (Principal Investigator), 1998-1999.
34. "Automatic Assessment of Compressed Digital Video Quality Using Human Visual Criteria," Dell Computer Corporation, $38,320 (Principal Investigator), 1999-2000.
35. "Wireless Video Coding," Lucent Technologies, $30,000 (Principal Investigator), 1999-2000.
36. "Web-based Instruction of Digital Signal, Image and Video Processing," TxTEC Consortium Curriculum Grant, $11,700 (Principal Investigator), 1999-2000.
37. "Web-based Instruction of Digital Signal, Image and Video Processing," TxTEC Consortium Faculty Incentive Grant, $4,000 (Principal Investigator), 1999-2000.
38. "Standards-compliant High-Quality Low-Bitrate Video Communications Using the TMS320C62x Processor," Texas Instruments, Incorporated, $198,712 (Principal Investigator), 1999-2001.
39. “Equipment for Web-Based Video Instruction,” TxTEC Consortium Curriculum Grant, $2,700 (Principal Investigator), 2000-2001.
40. “Biomedical Image Analysis I,” Perceptive Scientific Instruments, $10,000 (Co-Principal Investigator), 2000-2001.
41. “Image Processing Research,” Raytheon Corporation, $15,000 (Principal Investigator), 2000-2001.
42. “Digital Video Telecommunications Research and Teaching in the Laboratory for Image and Video Engineering (LIVE),” Intel Corporation, Equipment grant, cluster of Pentium III NT workstations, $50,000 (Principal Investigator), 2000-2001.
43. “Live Video Demonstrations for Teaching Digital Image and Video Processing,” TxTEC Consortium Curriculum Grant, $14,000 (Principal Investigator), 2001-2002.
44. “Video Networking I,” Unrestricted Research Grant, Southwestern Bell Telephone Company, $42,000 (Principal Investigator), 2001-2002.

45. “Biomedical Image Analysis II,” Perceptive Scientific Instruments, $7,500 (Principal Investigator), 2001.
46. “Digital video processing equipment grant,” Texas Instruments DSC21 EVM Video Processing Equipment, Texas Instruments, Inc., $15,000 commercial value (Principal Investigator), 2001.
47. “Biomedical Image Analysis III,” Perceptive Scientific Instruments, $7,500 (Principal Investigator), 2002.
48. “Video Networking II,” Unrestricted Research Grant, Southwestern Bell Telephone Company, $10,000 (Principal Investigator), 2002.
49. “Biomedical Image Analysis IV,” Perceptive Scientific Instruments, $20,000 (Principal Investigator), 2002-2003.
50. “Video Networking III,” Unrestricted Research Grant, Southwestern Bell Telephone Company, $40,000 (Principal Investigator), 2002-2003.
51. “Video Communication Research,” Unrestricted Research Grant, WNCG Industrial Affiliates Program, $2,500 (Principal Investigator), 2002-2003.
52. “Biomedical Image Analysis V,” Perceptive Scientific Instruments, $20,000 (Principal Investigator), 2003.
53. “Flourescence Microscopy,” Advanced Digital Imaging Research, $10,000 (Principal Investigator), 2003.
54. “Image Processing in Labview,” National Instruments, Inc., $10,000 (Principal Investigator), 2003.
55. “Video Networking IV,” Unrestricted Research Grant, Southwestern Bell Telephone Company, $40,000 (Principal Investigator), 2003-2004.
56. “Video Communication Research,” Unrestricted Research Grant, WNCG Industrial Affiliates Program, $2,500 (Principal Investigator), 2003-2004.
57. “Digital Light Display Projector,” Dell 3200MP Projector, Texas Instruments, Inc., commercial value $1,839 (Principal Investigator), 2004.
58. “Video Networking V,” Unrestricted Research Grant, Southwestern Bell Telephone Company, $40,000 (Principal Investigator), 2004-2005.
59. “Flourescence Microscopy,” Advanced Digital Imaging Research, $12,752 (Principal Investigator), 2004-2005.
60. “Face Recognition,” Advanced Digital Imaging Research, $25,504 (Principal Investigator), 2004-2005.
61. “Face Recognition,” Advanced Digital Imaging Research, $25,504 (Principal Investigator), 2004-2005.
62. “Video Communication Research,” Unrestricted Research Grant, WNCG Industrial Affiliates Program, $2,500 (Principal Investigator), 2004-2005.
63. “Video Communication Research,” Unrestricted Research Grant, WNCG Industrial Affiliates Program, $5,000 (Principal Investigator), 2005.
64. “Video Communication Research,” Unrestricted Research Grant, WNCG Industrial Affiliates Program, $10,000 (Principal Investigator), 2005-2006.
65. “Flourescence Microscopy,” Advanced Digital Imaging Research, $25,504 (Principal Investigator), 2005-2006.
66. “Face Recognition,” Advanced Digital Imaging Research, $51,008 (Principal Investigator), 2004-2005.
67. “Video Networking VI,” Unrestricted Research Grant, Southwestern Bell Telephone

Company, $40,000 (Principal Investigator), 2006.

68. "Image Quality for Postal Systems," Unrestricted Research Grant, U.S. Postal Service by Subcontract to Autim, Inc., $30,000 (Principal Investigator), 2006.
69. "Image Quality for the U.S. Mint," Unrestricted Research Grant, U.S. Mint by Subcontract to Autim, Inc., $10,000 (Principal Investigator), 2006.
70. "Wireless Video Surveillance I," Unrestricted Research Grant, Freescale Semiconductor, $25,000 (Co-Principal Investigator), 2006.
71. "Semiconductor Inspection," Unrestricted Research Grant, KLA-Tencor, $30,000 (Principal Investigator), 2006-2007.
72. "Video Communication Research," Unrestricted Research Grant, WNCG Industrial Affiliates Program, $10,000 (Principal Investigator), 2006-2007.
73. "Image Processing Education," Unrestricted Research Grant, National Instruments, $40,000 (Principal Investigator), 2006-2007.
74. "Video Networking VII," Unrestricted Research Grant, Southwestern Bell Telephone Company, $40,000 (Principal Investigator), 2007.
75. "Wireless Video Surveillance II," Unrestricted Research Grant, Freescale Semiconductor, $20,000 (Principal Investigator), 2007.
76. "Semiconductor Inspection II," Unrestricted Research Grant, KLA-Tencor, $30,000 (Principal Investigator), 2007-2008.
77. "Wireless Video Surveillance III," Unrestricted Research Grant, Freescale Semiconductor, $20,000 (Principal Investigator), 2007.
78. "Video Communication Research," Unrestricted Research Grant, WNCG Industrial Affiliates Program, $10,000 (Principal Investigator), 2007-2008.
79. "Objective Video Quality Measurement," Unrestricted Research Grant, AT&T, $40,000 (Principal Investigator) 2008.
80. "Advanced Perceptual Video Quality Measurement," Unrestricted Research Grant, Texas Instruments, $35,000 (Principal Investigator), 2008.
81. "Video Quality Assessment for In-Flight Entertainment Systems," Boeing, $99,000 (Co-Principal Investigator), 2008.
82. "Video Quality Assessment," Agilent, $39,640 (Principal Investigator), 2008.
83. "Video Communication Research," Unrestricted Research Grant, WNCG Industrial Affiliates Program, $15,000 (Principal Investigator), 2008-2009.
84. "Objective Video Quality Measurement," Unrestricted Research Grant, AT&T, $49,000 (Principal Investigator), 2009.
85. "Blind Image Quality Assessment," Unrestricted Research Grant, Videoclarity, Inc., $18,000 (Principal Investigator), 2009.
86. "Delivery and Assessment of High Quality Video over UDP/IP Networks," Boeing, $100,000 (Principal Investigator), 2009.
87. "Advanced Perceptual Rate Control," Unrestricted Research Grant, Texas Instruments, $35,000 (Principal Investigator), 2009.
88. "Spinal Imaging," Orthokinematics, $50,000 (Principal Investigator), 2009.
89. "Video Communication Research," Unrestricted Research Grant, WNCG Industrial Affiliates Program, $10,000 (Principal Investigator), 2009-2010.
90. "Blind Video Quality Algorithms," Unrestricted Research Grant, AT&T, $49,000 (Principal Investigator), 2010.
91. "Advanced Perceptual Rate Control II," Unrestricted Research Grant, Texas Instruments,

$35,000 (Principal Investigator), 2010.

92. "Perceptual Optimization of Wireless Video Networks," Unrestricted Research Grant, Intel Corporation and Cisco Corporation, $900,000, (Co-Principal Investigator), 2010-2012.
93. "Wireless Video Research," Unrestricted Research Grant, WNCG Industrial Affiliates Program, $10,000 (Principal Investigator), 2010-2011.
94. "Objective Measurement of Stereoscopic Visual Quality," Unrestricted Research Grant, Cisco Corporation, $99,438, (Principal Investigator), 2011.
95. "Blind Video Quality Algorithms II," Unrestricted Research Grant, AT&T, $49,000 (Principal Investigator), 2011.
96. "Objective Quality Assessment of Stereo Videos," Unrestricted Research Grant, Texas Instruments, $35,000 (Principal Investigator), 2011.
97. "Wireless Video Research," Unrestricted Research Grant, WNCG Industrial Affiliates Program, $20,000 (Principal Investigator), 2011-2012.
98. "Objective Quality Assessment of Stereo Videos II," Unrestricted Research Grant, Texas Instruments, $35,000 (Principal Investigator, 2012.
99. "Objective Measurement of Stereoscopic Visual Quality II," Unrestricted Research Grant, Cisco Corporation, $99,348, (Principal Investigator), 2012.
100. Equipment Grant, Intel, Inc. 8 Intel Xeon and I6 Processors, $24,000, (Principal Investigator), 2012.
101. "Blind Video Quality Assessment," Video Clarity, Inc., $17,000 (Principal Investigator), 2012.
102. Equipment Grant, Intel Inc., RAID Servers and RAID memory units, $15,000 (Principal Investigator), 2012.
103. "Wireless Video Research," Unrestricted Research Grant, WNCG Industrial Affiliates Program, $17,000 (Principal Investigator), 2012-2013.
104. "Study on Subjective Perception of Video Rebuffering Events," Avvasi, Inc., Unrestricted Research Grant, $18,000 (Principal Investigator), 2013.
105. "Wireless Video Research," Unrestricted Research Grant, WNCG Industrial Affiliates Program, $15,000 (Principal Investigator), 2013-2014.
106. "Perceptual Quality of Automotive Surround View Projection Systems," Unrestricted Research Grant, Texas Instruments, $35,000 (Principal Investigator), 2013.
107. "Spinal Image Analysis," St. David's Texas Neuroscience Institute, Unrestricted Research Grant, $37,500 (Co-Principal Investigator), 2013-2014.
108. "Study on Subjective Perception of Video Rebuffering Events II," Avvasi, Inc., Unrestricted Research Grant, $18,000 (Principal Investigator), 2014.
109. "Perceptual Quality of Automotive Surround View Projection Systems II," Unrestricted Research Grant, Texas Instruments, $35,000 (Principal Investigator), 2014.
110. "Wireless Video Research," Unrestricted Research Grant, WNCG Industrial Affiliates Program, $14,000 (Principal Investigator), 2014-2015.
111. "Spinal Image Analysis II," St. David's Texas Neuroscience Institute, Unrestricted Research Grant, $15,952 (Co-Principal Investigator), Spring 2015.
112. "Blind Video Quality Algorithms III," Unrestricted Research Grant, AT&T, $49,000 (Principal Investigator), 2015.
113. "Perceptual Quality of Automotive Surround View Projection Systems III," Unrestricted Research Grant, Texas Instruments, $35,000 (Principal Investigator), 2015.
114. "Subjective Study of In-capture Video Distortions," Qualcomm, Inc., $45,000 (Principal Investigator), 2015-2016.

115. “Perceptual Prediction of Streaming Video Artifacts,” Netflix, Inc., $85,000 (Principal Investigator), 2015-2016.
116. “Wireless Video Research,” Unrestricted Research Grant, WNCG Industrial Affiliates Program, $19,000 (Principal Investigator), 2015-2016.
117. “Tesla K-40 GPU Board for 3D Computer Vision Research,” Nvidia Corporation, Stated Value $906 (Principal Investigator), 2016.
118. “Perceptual Prediction of Streaming Video Artifacts II,” Netflix, Inc., $90,000 (Principal Investigator), 2016-2017.
119. “Perceptual Quality of Automotive Surround View Projection Systems III,” Unrestricted Research Grant, Texas Instruments, $35,000 (Principal Investigator), 2016.
120. “Wireless Video Research,” Unrestricted Research Grant, WNCG Industrial Affiliates Program, $14,000 (Principal Investigator), 2016-2017.
121. “Perceptual Issues of Streaming Video,” Unrestricted Research Grant, Huawei, Inc., $100,000 (Principal Investigator), 2017-2018.
122. “Perceptual Quality of Automotive Surround View Projection Systems IV,” Unrestricted Research Grant, Texas Instruments, $35,000 (Principal Investigator, ACB = $35,000), 2017.
123. “Perceptual Prediction of Streaming Video Artifacts III,” Netflix, Inc., $95,000 (Principal Investigator, ACB = $95,000), 2017-2018.
124. “Virtual Reality Research,” Research Gift from Private Donor, $15,000 (Principal Investigator, ACB = $15,000), 2017.
125. “Wireless Video Research,” Unrestricted Research Grant, WNCG Industrial Affiliates Program, $14,000 (Principal Investigator), 2017-2018.
126. “Subjective and Objective Studies of Perceptual Issues of Viewing Virtual Reality,” Oculus Research, $192,510 (Principal Investigator), 2017-2018.
127. “Deep Learning Perceptual Video Compression,” Electronics and Telecomunications Research Institute (Korea), $484,000 (Principal Investigator), 2018-2022.
128. “Perceptual Quality Assessment of Images and Videos,” Facebook Research, $863,921 (Principal Investigator), 2018-2021.
129. “Quality Assessment of User-Generated Videos,” YouTube, $52,000 (Principal Investigator), 2019.
130. “Quality Assessment of High Frame Rate Videos,” YouTube, $52,000 (Principal Investigator), 2019.
131. “Subjective and Objective Studies of Perceptual Issues of Viewing Virtual Reality II,” Oculus Research / Facebook Reality Labs, $201,292 (Principal Investigator), 2018-2019.
132. “Perceptual Prediction of Streaming Video Artifacts IV,” Netflix, Inc., $103,126 (Principal Investigator), 2018-2019.
133. “Wireless Video Research,” Unrestricted Research Grant, WNCG Industrial Affiliates Program, $14,000 (Principal Investigator), 2018-2019.
134. “Perceptual Studies and Algorithms for Compressed Virtual Reality,” Oculus Research / Facebook Reality Labs, $208,843 (Principal Investigator), 2019-2020.
135. “Real-Time Blind Video Quality Prediction on Live, High-Motion Studio/Professional-Grade Content,” Amazon Prime Video, $199,090 (Principal Investigator), 2019-2020.
136. “Video Annotation and Statistics Toolkit for Crowdsourcing Quality Assessment,” Intelligent Automation, Inc., $19,917 (Principal Investigator), 2019-2020.
137. “Perceptual Video,” Unrestricted Research Gift, Facebook Video, $110,000 (Principal Investigator), 2019-2020.

138. “Perceptual Prediction of Streaming Video Artifacts V,” Netflix, Inc., $110,000 (Principal Investigator), 2019-2020.
139. “Quality Assessment of User-Generated Videos II,” YouTube, $55,000 (Principal Investigator), 2020.
140. “Quality Assessment of High Frame Rate Videos II,” YouTube, $55,000 (Principal Investigator), 2020.
141. “Wireless Video Research,” Unrestricted Research Grant, WNCG Industrial Affiliates Program, $14,000 (Principal Investigator), 2019-2020.
142. “Assessing the Quality of Encoded/Transcoded Videos with Imperfect References II,” YouTube, $55,000 (Principal Investigator), 2020.
143. “Perceptual Prediction of Streaming Video Artifacts VI,” Netflix, Inc., $110,000 (Principal Investigator), 2020-2021.
144. “Perceptual Video II,” Unrestricted Research Gift, Facebook Video, $110,000 (Principal Investigator), 2020-2021.
145. “Perceptual Studies and Algorithms for Compressed Virtual Reality II,” Oculus Research / Facebook Reality Labs, $208,843 (Principal Investigator), 2020-2021.
146. “Wireless Video Research,” Unrestricted Research Grant, WNCG Industrial Affiliates Program, $14,000 (Principal Investigator), 2020-2021.
147. “Real-Time Blind Video Quality Prediction on Live, High-Motion Studio/Professional-Grade Content II: Full-Reference, HDR/HFR, and Chroma,” Amazon Prime Video, $199,090 (Principal Investigator), 2020-2021.
148. “Advanced Video Compression,” ARM, Inc., $25,000 (Principal Investigator), 2021.
149. “Real-Time Video Quality Prediction on Live, High-Motion Studio/Professional-Grade Content III: Full-Reference and No-Reference HDR/WCG/HFR,” Amazon Prime Video, $200,000 (Principal Investigator), 2021-2022.
150. “Foveated Compression for X Reality II,” Oculus Research / Facebook Reality Labs, $206,633 (Principal Investigator), 2021-2022.
151. “Wireless Video Research,” Unrestricted Research Grant, WNCG Industrial Affiliates Program, $14,000 (Principal Investigator), 2021-2022.
152. “Perceptual Gaming and Hologram Quality I,” Unrestricted Research Gift, Meta Platforms, $110,000 (Principal Investigator), 2021.
153. “Perceptual Prediction of Streaming Video Artifacts VII,” Netflix, Inc., $110,000 (Principal Investigator), 2021-2022.
154. “Perceptual Analysis of Shared Videos,” Sharechat Labs, $55,000 (Principal Investigator), 2021-2022.
155. “Perceptual Video III,” Unrestricted Research Gift, Facebook Video, $110,000 (Principal Investigator), 2021-2022.
156. “Perceptual Video IV,” Unrestricted Research Gift, Facebook Video, $110,000 (Principal Investigator), 2022-2023.
157. “Perceptual Video IV-Supplement,” Unrestricted Research Gift, Facebook Video, $30,000 (Principal Investigator), 2022-2023.
158. “The Estimation and Monitoring of Quality of Experience Delivered over Internet Services,” Unrestricted Research Gift, Viasat, $60,000 (Principal Investigator), 2022-2023.
159. “Quality Assessment of User-Generated Videos III,” YouTube, $55,000 (Principal Investigator), 2022.
160. “Quality Assessment of High Frame Rate Videos III,” YouTube, $55,000 (Principal

Investigator), 2022.

161. "Assessing the Quality of Encoded/Transcoded Videos with Imperfect References III," YouTube, $55,000 (Principal Investigator), 2022.
162. "Perceptual Gaming and Hologram Quality II," Unrestricted Research Gift, Meta Platforms, $110,000 (Principal Investigator), 2022.
163. "Perceptual Prediction of Streaming Video Artifacts VII," Netflix, Inc., $60,000 (Principal Investigator), 2022-2023.
164. "Wireless Video Research," Unrestricted Research Grant, WNCG Industrial Affiliates Program, $15,000 (Principal Investigator), 2022-2023.
165. "Real-Time Video Quality Prediction on Live, High-Motion Studio/Professional-Grade Content IV: Full-Reference and No-Reference HDR/WCG/HFR," Amazon Prime Video, $226,459 (Principal Investigator), 2023.
166. "Foveated Compression for Extended Reality," Meta Platforms Reality Labs, $179,389 (Principal Investigator), 2023.
167. "Perceptual Gaming and Hologram Quality III," Unrestricted Research Gift, Meta Platforms, $110,448 (Principal Investigator), 2023.
168. "Subjective and Objective Studies on HDR vs SDR Video Quality," Amazon Prime Video, $253,621 (Principal Investigator), 2023-2024.
169. "Gaming Video Quality Analysis I," Sony Interactive Entertainment, $60,000 (Principal Investigator), 2023.
170. "Deep Learning Based Image Analysis Methods," Shell Oil, $150,000 (Principal Investigator), 2023.
171. "Wireless Video Research," Unrestricted Research Grant, WNCG Industrial Affiliates Program, $13,000 (Principal Investigator), 2023-2024.
172. "Understanding the Quality of User Generated Contents, in Particular Vertical Formats Seen in Short Form Videos," YouTube, $55,000 (Principal Investigator), 2024.
173. "Understanding the Quality of Text and Overlays in User Generated Contents," YouTube, $55,000 (Principal Investigator), 2024.
174. "Gaming Video Quality Analysis II," Sony Interactive Entertainment, $60,000 (Principal Investigator), 2024.
175. "Assessing the Quality of Encoded/Transcoded Videos with Imperfect References IV," YouTube, $55,000 (Principal Investigator), 2024.
176. "Perceptual Prediction of Streaming Video Artifacts VII," Netflix, Inc., $60,000 (Principal Investigator), 2024-2025.
177. "Perceptual Gaming and Hologram Quality IV," Unrestricted Research Gift, Meta Platforms, $110,448 (Principal Investigator), 2023-2024.
178. "Perceptual Gaming and Hologram Quality IV Supplement," Unrestricted Research Gift, Meta Platforms, $20,000 (Principal Investigator), 2024.
179. "Understanding The Quality Of User Generated Contents (UGC) For Portrait And Landscape, For HDR Formats, And Compression Effects," Unrestricted Research Gift, YouTube, $165,000 (Principal Investigator), 2025.
180. "Avatar Expression Quality in VR and AR," Unrestricted Research Gift, Meta Platforms, $120,000 (Principal Investigator), 2025-2026.

University Grants

1. "Image Analysis using Local Statistics," Bureau of Engineering Research, The University of

Texas at Austin, $5,000 (Principal Investigator), 1984-1985.

2. "Boundary Detection in Speckle Images," University Research Institute, University of Texas, $4,980 (Principal Investigator), 1984-1985.
3. "Development of a Stereo Computer Vision Laboratory," University Research Institute, University of Texas, $4,980 (Principal Investigator), 1985-1986.
4. "Active Vision," University of Texas Challenge for Excellence in Computer Engineering, $14,000 (Principal Investigator), 1990-1991.
5. "New Developments in Multi-scale Signal Processing with Application to Animated Computer Vision," University Research Institute Faculty Research Assignment, University of Texas, $28,790 (Principal Investigator), 1991-1992.
6. "Digital Image and Video processing on the World Wide Web using National Instruments' LabVIEW," University of Texas Academic Development Funds, $4,000 (Principal Investigator), 1997.
7. "Foveated Visual Search: from Humans to Machines," Interdisciplinary Research Initiative, University of Texas, $100,000 (Co-Principal Investigator), 2000-2001.
8. "Using Visual Attention in Video Processing and Communication," Dean's Fellowship, College of Engineering, The University of Texas at Austin, $56,000 (Principal Investigator), 2002.
9. Endowment Funds, Curry-Cullen Trust Endowed Chair Professorship, The University of Texas at Austin, $25,000 (Principal Investigator), 2005-2006.
10. Endowment Funds, Curry-Cullen Trust Endowed Chair Professorship, The University of Texas at Austin, $25,000 (Principal Investigator), 2006-2007.
11. Endowment Funds, Curry-Cullen Trust Endowed Chair Professorship, The University of Texas at Austin, $25,000 (Principal Investigator), 2007-2008.
12. Endowment Funds, Curry-Cullen Trust Endowed Chair Professorship, The University of Texas at Austin, $25,000 (Principal Investigator), 2008-2009.
13. Endowment Funds, Curry-Cullen Trust Endowed Chair Professorship, The University of Texas at Austin, $25,000 (Principal Investigator), 2009-2010.
14. "Stereo CAD for 3D Breast Imaging," Research Grant, The University of Texas at Austin, $6,000 (Principal Investigator), 2010.
15. Endowment Funds, Curry-Cullen Trust Endowed Chair Professorship, The University of Texas at Austin, $25,000 (Principal Investigator), 2010-2011.
16. Endowment Funds, Curry-Cullen Trust Endowed Chair Professorship, The University of Texas at Austin, $25,000 (Principal Investigator), 2011-2012.
17. Endowment Funds, Curry-Cullen Trust Endowed Chair Professorship, The University of Texas at Austin, $25,000 (Principal Investigator), 2012-2013.
18. "EE 381V Digital Video," College of Engineering Academic Development Funds, $10,587 (Principal Investigator), 2012-2013.

19. Endowment Funds, Curry-Cullen Trust Endowed Chair Professorship, The University of Texas at Austin, $25,000 (Principal Investigator), 2013-2014.
20. Endowment Funds, Cockrell Family Regents Endowed Chair Professorship, The University of Texas at Austin, $80,000 (Principal Investigator), 2014-2015.
21. Endowment Funds, Cockrell Family Regents Endowed Chair Professorship, The University of Texas at Austin, $80,000 (Principal Investigator), 2015-2016.
22. Endowment Funds, Cockrell Family Regents Endowed Chair Professorship, The University of Texas at Austin, $80,000 (Principal Investigator), 2016-2017.
23. Endowment Funds, Cockrell Family Regents Endowed Chair Professorship, The University of Texas at Austin, $80,000 (Principal Investigator), 2017-2018.
24. Endowment Funds, Cockrell Family Regents Endowed Chair Professorship, The University of Texas at Austin, $80,000 (Principal Investigator), 2018-2019.
25. Endowment Funds, Cockrell Family Regents Endowed Chair Professorship, The University of Texas at Austin, $80,000 (Principal Investigator), 2019-2020.
26. Endowment Funds, Cockrell Family Regents Endowed Chair Professorship, The University of Texas at Austin, $80,000 (Principal Investigator), 2020-2021.
27. Endowment Funds, Cockrell Family Regents Endowed Chair Professorship, The University of Texas at Austin, $80,000 (Principal Investigator), 2021-2022.
28. Endowment Funds, Cockrell Family Regents Endowed Chair Professorship, The University of Texas at Austin, $100,000 (Principal Investigator), 2022-2023.
29. Endowment Funds, Cockrell Family Regents Endowed Chair Professorship, The University of Texas at Austin, $100,000 (Principal Investigator), 2023-2024.
30. Endowment Funds, Cockrell Family Regents Endowed Chair Professorship, The University of Texas at Austin, $100,000 (Principal Investigator), 2024-2025.

Graduate Student Supervision

Professor Bovik has graduated or is presently supervising the following students:

M.S. Completed:

Acton, Scott
Arnow, Thomas
Bernstein, Alan
Brooks, Robin
Chen, Ming-Jun
Chu, Chen-Chau
Craevich, Danielle
Dehel, Thomas
Emmoth, Tomas
Floren, Andrew
Ghadiyaram, Deepti
Gibson, Michael
Gopal, Nanda
Griffin, Christopher
Grosenbacher, Timothy
Gupta, Praful
Kladopoulos, K.
Krishnan, Vidhya
Lacour, Patrick
Larcom, Ronald
Lee, Joonsoo
Lindsey, Laurence
Luck, Brette
Malpica, William
Messerschmitt, Tina
Mittal, Anish
Moorthy, Anush
Pai, Hung-Ta
Pai, Ritha
Panayi, George
Rashid, Mosfeq
Reynolds, A-Lan
Restrepo, Alfredo
Sanders, Kirk
Schwartzkopf, Wade
Seshadrinathan, Kalpana
Sharma, Shubham
Shueh, Fen-Fen
Sheikh, Hamid
Simms, Andrew
Spires, Shannon
Suriamoorthy, Kartick
Von Bavel, Nicholas
Wehnes, Jeffrey
Wu, Chengyang
Xie, Zhengyi

Harding, David	Saad, Michele
Jou, Jinn-Yeu	Sabir, Farooq
Kaser, Jenny	Sampat, Mehul
Klarquist, William	

Ph.D. Completed, Year, Dissertation Titles:

1.	Longbotham, Harold (1988)	"Deterministic Theory of Order Statistic Filters" (Deceased. Formerly Professor at University of Texas, San Antonio, TX)
2.	Macías-Garza, Fernando (1988)	"Implementation and Limitations of Scanning Light Microscopy for the Determination of Three-Dimensional Structure from Optical Serial Sections" (Currently President of Document-OS, Austin, Texas)
3.	Kim, Nak (1989)	"Computation of Shape from Stereo Images with Application to Biological Shape Analysis" (Currently Professor at Hankuk University of Foreign Studies, Seoul, Korea)
4.	Naaman, Laith (1990)	"Design of Least-Squares Order Statistic Filters"
5.	Chen, Dapang (1990)	"Visual Pattern Image Coding" (Currently DSP Team Leader Research Engineer at National Instruments, Austin, TX)
6.	Jordan, John (1990)	"On Using Chromatic Information in Stereo Correspondence" - selected winner of the University of Texas all-campus Outstanding Dissertation Award (Currently Vice President of Research at KLA-Tencor Instruments, San Jose, CA)
7.	Restrepo, Alfredo (1990)	"Locally Monotonic Regression and Related Techniques for Signal Smoothing and Shaping" (Currently Professor Ret. at University of the Andes in Bogota, Colombia)
8.	Super, Boaz (1992)	"Understanding Images of Textured Surfaces" (Currently Senior Research Engineer at Motorola, Inc., Schaumberg, Illinois)
9.	Bartels, Keith (1993)	"The Analysis of Biological Shape and Shape-Change from Multi-Dimensional Image Sequences" (Currently Research Engineer at Southwest Research Institute, San Antonio, TX)
10.	Silsbee, Peter (1993)	"Computer Lipreading for Improved Accuracy in Automatic Speech Recognition" (Currently Research Engineer at Qualcomm, Boulder, CO)
11.	Acton, Scott (1993)	"Generalized Deterministic Annealing with Application to Nonconvex Optimization

		Problems in Image Processing” **FELLOW OF THE IEEE** (Currently Professor at University of Virgina, Charlottesville, VI)
12.	Chen, Tieh-Yuh (Terry) (1995)	“Stereo Disparity from Local Image Phase: New Models for Image Modulation, Coarse-to-Fine Processing, and Disparity Channels” (Currently Section Chief at Chung-Shan Institute of Science and Technology, Taiwan)
13.	Klarquist, William (1995)	“FOVEA: A Foveated Vergent Active Stereo Vision System for Dynamic Three-Dimensional Scene Recovery” (Currently Research Engineer at SAIC, Denver, CO)
14.	Yim, Changhoon (1996)	“Multiresolution 3-D Range Segmentation Using Focus Cues” (Currently Professor at Konkuk University, Konkuk, South Korea)
15.	Havlicek, Joseph (1996)	“AM-FM Image Models” (Currently Professor at University of Oklahoma, Norman, OK)
16.	Pattichis, Marios (1998)	"AM-FM Transforms and Applications" (Currently Professor at The University of New Mexico, Albuquerque, NM)
17.	Wei, Dong (1998)	"Theory and Applications of Coiflet-Type Wavelets" (Currently Research Engineer at Huawei, Inc., Dallas, TX)
18.	Kite, Thomas (1998)	"Design and Quality Assessment of Forward and Inverse Error Diffusion Halftoning Algorithms" (Deceased. Formerly Vice President of Engineering at Audio Precision, Beaverton, OR)
19.	Pai, Hung-Ta (1999)	"Multichannel Blind Image Restoration" (Currently Professor at the National Taipei University, Taipei, Taiwan)
20.	Lee, Sanghoon (2000)	“Foveated Video Compression and Visual Communications Over Wireless and Wireline Networks” **FELLOW OF THE IEEE** (Currently Professor at Yonsei University, Seoul, South Korea)
21.	Barnett, Barry (2000)	“Multiparty Videoconferencing Using Motion Compensated Visual Pattern Image Sequence Coding” (Currently Consultant for International Business Machines, Inc., Austin, TX)
22.	Wang, Zhou (2001)	“Rate Scalable Foveated Image and Video

Communications"
FELLOW OF THE IEEE
(Currently Professor at the University of Waterloo, Ontario, Canada)

23. Ling, Jian (2001) "The Development of Raman Imaging Microscopy to Visualize Drug Actions in Living Cells"
(Currently Research Engineer at Southwest Research Institute, San Antonio, TX)

24. Liu, Shizhong (2001) "DCT-Domain Video Foveation and Transcoding for Heterogeneous Video Communication"
(Currently Research Engineer for Qualcomm, San Diego, CA)

25. Swartzkopf, Wade (2002) "Maximum Likelihood Techniques for Joint Segmentation-Classification of MFISH Images"
(Currently Research Engineer at Integrity Applications Inc., Washington, DC)

26. Sheikh, Hamid Rahim (2004) "Image Quality Assessment Using Natural Scene Statistics"
FELLOW OF THE IEEE
(Currently Vice-President of Research Engineer at Samsung USA, Dallas, TX)

27. Rajashekar, Umesh (2005) "Statistical Analysis and Selection of Visual Fixations"
(Currently Post-Doctoral Research Associate at New York University, New York, NY)

28. Sabir, Muhammad Farooq (2006) "Source-Channel Distortion Modeling for Image and Video Communication"
(Currently Senior Engineer at AT&T Corporation, Dallas, TX)

29. Choi, Hyohoon (2006) "Automatic Segmentation and Classification of Multiplex-Flourescence In-Situ Hybridization Chromosome Images"
(Currently Research Engineer at Samsung Corporation, Seoul, Korea)

30. Sampat, Mehul (2006) "Evidence-Based Detection of Spiculated Lesions"
(Currently Research Fellow, Center for Neurological Imaging, Brigham and Women's Hospital & Harvard Medical School, Cambridge, MA)

31. Monaco, James Peter (2006) "Active Binocular Vision: Phase-Based Registration and Optimal Foveation"
(Currently Research Engineer at VuComp, Inc., Dallas, TX)

32. Raj, Raghu (2007) "Optimal Visual Search Strategies Using Natural Scene Statistics"
(Currently Research Engineer at The Naval Research Laboratory, Washington, DC)

33. Tavassoli, Abtine (2007) "Discovery and Representation of Human Strategies for Visual Search" (Currently Managing Scientist at Exponent, Inc., Los Angeles, CA)
34. Channappayya, Sumohana (2007) "Image Communication System Design Based on the Structural Similarity Index" (Currently Professor at Indian Institute of Technology, Hyderabad, Andra Pradesh, India)
35. Arnow, Thomas (2008) "Foveated Object Recognition by Corner Search" (Currently Professor Ret. at Palo Alto College, San Antonio, TX)
36. Seshadrinathan, Kalpana (2008) "Video Quality Assessment Based on Motion Models" (Currently Head of Machine Learning at Sydio, CA)
37. Gupta, Shalini (2008) "Novel Algorithms for 3-D Face Recognition (Currently Director of Research at Nvidia Research, Berkeley, CA)
38. Liu, Yang (2010) "Scene Statistics in 3D Natural Environments" (Currently Post-Doctoral Researcher at Harvard Medical School and Wellesley College, Boston, MA)
39. Coffman, Thayne (2011) "Stochastic Methods in Computational Stereo" (Currently Analyst at RGM Advisors, Austin, TX)
40. Jahanbin, Sina (2011) "Recognition of 3D Faces" (Currently Research Engineer at Research Engineer at Apple, Cupertino, CA)
41. Gopinath, Ajay (2012) "Feature Modeling and Tomographic Reconstruction of Electron Microscopy Images" (Currently Research Engineer at LightLab Imaging, part of St. Jude Medical Systems)
42. Soundararajan, Rajiv (2012) "Information Theoretic Methods in Distributed Compression and Visual Quality Assessment" (Currently Professor at Indian Institute of Science, Bangalore)
43. Moorthy, Anush Krishna (2012) "Natural Scene Statistic Based Blind Image Quality Assessment and Repair" (Currently Research Engineer at Netflix, Los Gatos, CA)
44. Chen, Ming-Jun (2012) "Visual Perception and Quality of Distorted Stereoscopic 3-D Images" (Currently Research Engineer at Google, Mountain View, CA)
45. Muralidhar, Gautam (2012) "Computer-Aided Analysis and Interpretation of Breast Imaging Data" (Currently Senior Data Scientist at Nio, Inc.)
46. Saad, Michele (2013) "Blind Image and Video Quality Assessment Using Natural Scene and Motion Models" (Currently

Research Engineer at Adobe, Austin, TX)

47. Mittal, Anish (2013) "Natural Scene Statistics-based Blind Visual Quality Assessment in the Spatial Domain" (Currently Research Engineering Manager at HERE, Berkeley, CA)
48. Chen, Chao (2013) "Visual Quality-Optimized Adaptive Video Streaming over Wireless Channels," (Currently Research Engineer at Netflix)
49. Lee, Juhun (2014) "Quantitative Analysis of Aesthetic Outcomes of Reconstructive Surgery: Disfigurement After Facial Reconstruction" (Currently Post-Doc at UT Southwestern Medical Center University)
50. Su, Che-Chun (2014) "Applied Statistical Modeling of Three-Dimensional Natural Scene Data" (Currently Research Engineer at Amazon)
51. Choi, Lark-Kwon (2015) "Flicker Perception on Digital Videos" (Currently Research Engineer at Qualcomm)
52. Isikdogan, Furkan (2017) "Automatically Creating Spatiotemporal River Maps of the World Using Remotely Sensed Images" (Currently Research Engineer at Apple)
53. Ghadiyaram, Deepti (2017) "Perceptual Quality Assessment of Real-World Images and Videos" (Currently Professor at Boston University)
54. Bampis, Christos (2018) "Perceptual Video Quality and Quality of Experience for Adaptive Video Streaming" (Currently Research Engineer at Netflix)
55. Goodall, Todd (2018) "Inspection and Evaluation of Artifacts in Digital Video Sources" (Currently Research Engineer at Apple)
56. Sinno, Zeina (2019) "Statistical and Perceptual Properties of Images and Videos with Applications" (Currently Research Engineer at Google Research)
57. Pan, Janice (2019) "Perceptual Monocular Depth Estimation" (Currently Research Engineer at Google Research)
58. Gupta, Praful (2021) "Measuring and Predicting Detection Performance on Security Images as a Function of Image Quality" (Currently Research Engineer at Amazon, Inc.)
59. Ying, Zhenqiang (2022) "Perceptual Quality Prediction of Social Pictures, Social Videos, and Telepresence Videos" (Currently Research Engineer at Meta Platforms, Inc.)
60. Jin, Yize (2022) "Subjective and Objective Video Quality Assessment of Foveated Videos in Virtual Reality" (Currently Research Engineer at Meta Platforms, Inc.)
61. Yu, Xiangxu (2022) "Quality Assessment of User-Generated-Content Images and Videos"

(Currently Professor at Shanghai University)

62. Chen, Meixu (2022) "Virtual Reality: Quality and Compression"
(Currently Research Engineer at Meta Platforms, Inc.)

63. Chen, Li-Heng (2022) "Perceiving Pixels and Bits: Perceptual Optimization of Image and Video Encoding Pipelines"
(Currently Research Engineer at Netflix, Inc.)

64. Paul, Somdyuti (2022) "Deep Learning Solutions for Video Encoding and Streaming"
(Currently Professor at IIT Kharagpur)

65. Madhusudana, Pavan (2022) "Learning Variable Frame Rate and Unsupervised Video Quality Assessment"
(Currently Research Engineer at Netflix)

66. Tu, Zhengzhong (2022) "Quality Prediction and Visual Enhancement of User-Generated Content"
(Currently Professor at Texas A&M)

67. Lee, Dae Yeol (2022) "Studies on Space-Time Resolution Adaptation for Perceptually Optimal Video Compression"
(Currently Research Engineer at Dolby Labs)

68. Ebenezer, Joshua (2023) "No-Reference Video Quality Assessment: High Motion and HDR Videos"
(Currently Research Engineer at Samsung America)

69. Shang, Zaixi (2023) "Subjective and Objective Video Quality Assessment for High Motion and HDR Videos"
(Currently Research Engineer at Amazon Prime Video)

70. Kim, Sungsoo (2024) "Application of Machine Learning in Medicine: Analysis of Static Medical Records and Dynamic Physiologic Waveforms for Early Diagnosis and Treatments of Hemodynamic Instability in Critically Ill Patients"
(Currently a Physician at UCLA Medical Center)

71. Venkataramanan, Abhinau (2024) "Automatic Assessment and Enhancement of Streaming Video Quality Under Bandwidth and Dynamic Range Limitations"
(Currently Research Engineer at Samsung America)

72. Mandal, Maniratnam (2024) "Image and Video Quality Assessment for User-generated Media"

73. Saha, Avinab (2025) "Perceptual Quality Assessment of Next Generation Media: Videos, Games, Avatars, and Facial Expressions"
(Currently Research Engineer at Google Research)

74. Chen, Yi-Chi (Berrie) "Advancements in Perceptual Quality Assessment for Interactive Media: From Mobile Cloud Gaming to Human Avatar Videos and Facial Expressions"
(Currently Professor at National Yang Ming Chiao Tung University, Taiwan)

Ph.D. in Progress (Post Qual):

Chen, Bowen	Durbha, Krishna Srikar	Lee, Cheng-Han
Mishra, Sandeep	Saini, Shreshth	

Ph.D. in Progress Pre Qual):

Gedik, Haken	Gupta, Shashank	Park, Seobin
Pentapati, Sai Karthik	Sureddi, Rajesh	Venkataramanan, Asvin

Teaching

Professor Bovik has taught the following courses at The University of Texas at Austin:

Graduate

EE 380L - Computer Vision (Fall ‘84, Fall ‘85, Fall ‘86, Fall ‘87, Fall ‘88, Fall ‘89, Fall ‘90)
EE 381K - Digital Signal Processing (Spring ‘86, Spring ‘87, Spring ‘88, Spring ‘93, Spring ‘94, Spring ‘95, Spring ‘96, Spring ‘97, Spring ‘98, Spring ‘99, Spring ‘00, Spring ‘01, Spring ‘02, Spring ‘03, Fall ‘03, Fall ‘04, Fall ‘05, Fall ‘06, Fall ‘07, Fall ‘10, Fall ‘11, Fall ‘12)
EE 381K - Introduction to Stochastic Processes (Spring ‘89)
EE 381V/381K – Digital Video (Spring ‘14, Spring ‘15, Spring ‘16, Spring ‘17, Spring ‘20, Spring ‘21, Spring ‘22, Spring ‘23)

Undergraduate

EE 351K - Probability & Random Processes (Spring ‘85, Fall ‘85, Spring ‘86, Fall ‘86, Spring ‘90, Spring ‘91)
EE 379K - Digital Image Processing (Fall ‘91, Fall ‘92, Fall ‘93, Fall ‘94, Fall ‘95, Fall ‘96)
EE 371R – Digital Image and Video Processing (Fall ‘97, Fall ‘98, Fall ‘99, Fall ‘00, Fall ‘01, Fall ‘02, Summer ‘03, Spring ‘04, Spring ‘05, Spring ‘06, Spring ‘07, Spring ‘08, Spring ‘10, Spring ‘11, Spring ‘12, Spring ‘13, Fall ‘13, Fall ‘14, Fall ‘15, Fall ‘16, Fall ‘17, Fall ‘18, Fall ‘19)
ECE 371Q - Digital Image Processing (Fall ‘20, Fall ‘21, Fall ‘22, Fall ‘23)

Professor Bovik has taught the following courses at the University of Colorado Boulder:

ECEN 4672-5672 – Digital Image Processing (Fall ’25)