Michael T. Orchard
Professor, Rice University
Department of Electrical and Computer Engineering
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(713) 348-3822
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Education:

Ph.D. and M.A. in Electrical Engineering, Princeton Univ., 1990, 1988;
M.S. and B.S. in Electrical Engineering, San Diego State Univ., 1986, 1981.

Professional Employment:

Professor, Dept. of Electrical and Computer Engr., Rice University, 2001 - present
Co-Director, Masters of Elect. & Comp. Engr. Program, Rice University, 2012 - present
Texas Instruments Visiting Prof., Dept. of ECE, Rice University, 2000 - 2001
Associate Professor, Dept. of Elect. Engr., Princeton University, 1995 - 2001
Assistant Professor, Dept. of Elect. & Comp. Engr., Univ. of Illinois at Urb.-Champ., 1990-1995

Major Industrial Experience:

2003: Flextronics Corporation, Consultant, Digital Signal Processing
1999: NEC Research Institute, Consultant
1996 - 1999: AT&T Laboratories, Consultant, Video Communications Department
1992-93; 1988-90: AT&T Bell Laboratories, Consultant, Video Communications Department
1982-86: Scientific Atlanta, Senior Technical Specialist, Sonar DSP

Awards, Fellowships, Honor Societies:

Elected IEEE Fellow, January, 2000.
"For contributions to the theory and development of image and video compression algorithms."
Distinguished Alumni Award, San Diego State University, 1998
Princeton Engineering Council, 'Excellence in Teaching" Award, Spring, 1996
Army Research Office Young Investigator Award, 1996
National Science Foundation Young Investigator Award, 1993,
"Optimal motion compensation for video coding"
Xerox Award for Faculty Research - Junior, 1993
1993 Faculty Inductee of Eta Kappa Nu - recognizing teaching excellence
AT&T Ph.D. Fellowship, 1987-90;
Analog Devices Graduate Fellowship, 1986-87;
Tau Beta Pi, Eta Kappa Nu

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Professional Societies and Activities:

1. Co-General Chair, Digital Image Processing and Analysis Conference, June, 2010.
2. Associate Editor, IEEE Signal Processing Letters, 1998-2000
3. Associate Editor, IEEE Transactions on Image Processing, 1994-1997.
4. Editorial Board, Applied and Computational Harmonic Analysis
5. Elected Member, Image and Multidimensional Signal Processing Technical Committee of the IEEE Signal Processing Society, 1994-2000
6. Technical Program Chair, Int. Conf. on Image Processing, Chicago, IL, October, 1998.
7. Featured Tutorial, "Wavelet-based Image Coding", at European Signal Processing Conference, Rhodes, Greece, September, 1998.
8. Featured Tutorial, "Digital Video Compression", at Int. Conf. on Image Processing, Lausanne, Switzerland, September, 1996.
9. Program Director, Conf. on Infor. Sciences and Systems, Princeton NJ, 1996.
10. Guest Editor, Special Issue on Recent Development in Video: Algorithms, Implementation, and Applications, *Journal of VLSI Signal Processing*, 1996
11. Keynote Talk, "Wavelet-based coding: past, present, future," Data Compression Conference, Snowbird, UT, March 1995.
12. Invited Speaker, Univ. of Calif. at Berkeley MBONE Internet seminar series, Feb., 1995
13. Invited Speaker, SPIE Symposium on Optical Science, Engineering, and Instrumentation, Denver, Colorado, August 1996.
14. Special Sessions Chair, Int. Conf. on Image Processing, Austin, TX, November, 1994.
15. Co-Organizer, Workshop on Very Low Bitrate Video Compression, May 1, 1993, Urbana, IL.
16. Co-Chair/Organizer, Plenary and Special Sessions on Digital Video, IEEE Int. Conf. on Acous., Speech, and Sig. Proc., April, 1993.
17. National Science Foundation, Site Review Panel, Institutional Infrastructure Program - 1993, 1996; Engineering Research Center Program - 1996.
18. Program Committee Member, IS&T/SPIE Symposium on Electronic Imaging Science and Technology, Conference on Image and Video Compression, 1994, 1995, 1996.
19. Technical Committee Member, SPIE Conference on Visual Communications and Image Processing, 1994, 1996, 1997, 1998, 1999, 2000, 2001.
20. Technical Program Committee, IEEE Data Compression Conference, 1995, 1996.
21. Technical Program Committee, International Picture Coding Symposium, 1997

Book Chapters:

1. Z. Xiong, K. Ramchandran, and M. T. Orchard, "Space-frequency Quantization for Wavelet Image Coding," Wavelet Image and Video Compression, P. Topiwala, ed., Kluwer, 1998.

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Journal Publications:

1. Lantao Yu, Kuida Liu and M.T. Orchard, "Manifold-Inspired Single Image Interpolations", in review, *IEEE Trans. on Image Processing,* 2021.
2. H. F. Ates, and M. T. Orchard, "Spherical coding algorithm for wavelet image compression", *IEEE Trans. on Image Processing*, vol. 18, no. 5, May, 2009, pp. 1015-1024
3. H. F. Ates, and M. T. Orchard, "An adaptive edge model in the wavelet domain for wavelet image coding", *Signal Processing: Image Communications*, Elsevier, vol. 20, no. 2, pp: 169-185, Feb. 2005
4. Xin Wang and M. T. Orchard, "On reducing the rate of retransmission in time-varying channels", *IEEE Trans. on Communications*, vol. 51, no. 6, June 2003, pp. 900-910.
5. Y. Wang, A. R. Reibman, M. T. Orchard and H. Jafarkhani, "An improvement to multiple description transform coding," *IEEE Trans. on Signal Processing*, vol. 50, no. 11, pp. 2843-2854, Nov. 2002.
6. Xin Li and Michael Orchard, "Novel Sequential Error Concealment Techniques Using Orientation Adaptive Interpolation", *IEEE Trans. on Circ. and Syst. for Video Techn.*, vol. 12, no. 10, pp. 857-864, Oct. 2002.
7. Albert Cohen, Ingrid Daubechies, Onur G. Guleryuz and Michael T. Orchard, "On the importance of combining wavelet-based nonlinear approximation with coding strategies," *IEEE Transactions on Information Theory*, vol. 48, no. 7, pp. 1895-1921, July 2002.
8. A. R. Reibman, H. Jafarkhani, Y. Wang, M. T. Orchard, and R. Puri, "Multiple description video coding using motion-compensated temporal prediction", *IEEE Trans. on Circ. and Syst. for Video Techn.*, vol. 12, no. 3, pp. 193-204, March, 2002.
9. R. Rajagopalan and M. T. Orchard, "Synthesizing Processed Video by Filtering Temporal Relationships", *IEEE Trans. on Image Processing*,, vol. 11, no. 1, pp. 26-36, Jan., 2002.
10. Xin Li and Michael Orchard, "New edge-directed interpolation", *IEEE Trans. on Image Processing*, vol. 10, no. 10 , pp. 1521 -1527, Oct. 2001.
11. Stone, H.S., Orchard, M. T., Ee-Chien Chang, and Martucci, S. A., "A fast direct Fourier-based algorithm for subpixel registration of images," *IEEE Trans. on Geoscience and Remote Sensing*, Vol. 39, no. 10, pp. 2235-2243, Oct. 2001.
12. Xin Li and M.T. Orchard,"Edge Directed Prediction for Lossless Compression of Natural Images", *IEEE Trans. on Image Processing*, vol. 10, no. 6 , pp. 813-817, June, 2001.
13. Y. Wang, M. Orchard, V. Vaishampayan, and A. R. Reibman, " Multiple Description Coding using Pairwise Correlating Transforms", *IEEE Trans. Image Processing*, vol. 10, no. 3, pp. 351-366, March, 2001.
14. Bo Tao and M. T. Orchard "A parametric solution of optimal overlapped block motion compensation," *IEEE Trans. Image Processing*, vol. 10, no. 3, pp. 341-350, March, 2001.
15. O. G. Guleryuz and M. T. Orchard, "On the DPCM Compression of Gaussian Auto-Regressive Sequences," *IEEE Transactions on Information Theory*, vol. 47, no. 3, pp. 945-956, March, 2001.

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16. Bo Tao and M. T. Orchard, ”Gradient-based residual variance modeling and its applications to motion-compensated video coding”, *IEEE Trans. Image Processing*, vol.10, no. 1, pp. 24-35, Jan. 2001.
17. Bo Tao and M. T. Orchard, ”Removal of motion uncertainty and quantization noise in motion compensation”, *IEEE Trans. on Circuits and Systems for Video Techn.*, vol. 11, no. 1, pp. 80-90, Jan. 2001.
18. Z. Xiong, M. T. Orchard, and K. Ramchandran, ”Inverse halftoning using wavelets,” *IEEE Trans. Image Processing*, vol. 8, no. 10, pp. 1479-1483, Oct., 1999.
19. S. D. Servetto, K. Ramchandran and M. T. Orchard, ”Image coding based on a morphological representation of wavelet data,” *IEEE Trans. Image Processing*, vol. 8, no. 9, pp. 1161-1174, Sept., 1999.
20. Z. Xiong, K. Ramchandran, M. T. Orchard, and Y.-Q. Zhang, “A comparative study of DCT and wavelet based coding,” *IEEE Trans. Circuits and Systems for Video Tech.*, vol. 9, no. 9, pp. 692-695, Aug. 1999.
21. Z. Xiong, K. Ramchandran and M. T. Orchard, “Wavelet packet image coding using space- frequency quantization,” *IEEE Trans. Image Processing*, vol. 7, no. 6, pp. 892-898, June 1998.
22. R. Rajagopalan, E. Feig and M. T. Orchard, “Motion optimization of ordered blocks for overlapped block motion compensation,” *IEEE Transactions on Circuits and Systems for Video Technology*, vol 8, no. 2, pp. 119-123, April, 1998.
23. K. Ramchandran and M. T. Orchard, ”An investigation of wavelet-based image coding using entropy-constrained quantization framework,” *IEEE Trans. Signal Processing*, vol. 46, no. 2, pp. 342-353, Feb. 1998.
24. R. Rajagopalan, M. T. Orchard, and R. D. Brandt, ”Motion-field modeling for video sequences,” *IEEE Trans. on Image Processing*, vol. 6, no. 11, pp. 1503-1516, November, 1997.
25. C. Herley, Z. Xiong, K. Ramchandran and M. T. Orchard, ”Joint Space-frequency Segmentation Using Balanced Wavelet Packets Trees for Least-cost Image Representation”, *IEEE Trans. Image Processing*, vol. 6, no. 9, pp. 1213-1230, September 1997.
26. Z. Xiong, K. Ramchandran and M. T. Orchard, ”Space-frequency Quantization for Wavelet Image Coding”, *IEEE Trans. Image Processing*, vol. 6, no. 5, pp. 677-693, May 1997.
27. O.G. Guleryuz and M. T. Orchard, ”Optimized nonorthogonal transforms for image compression”, *IEEE Trans. on Image Processing*, vol. 6, no. 4, pp. 507-522, April, 1997.
28. Z. Xiong, M. T. Orchard, and Y.-Q. Zhang, ”A deblocking algorithm for JPEG compressed images using overcomplete wavelet representations”, *IEEE Transactions on Circuits and Systems for Video Technology,* vol. 7, no. 2, pp. 433-437, April, 1997.
29. Z. Xiong, K. Ramchandran, C. Herley, and M.T. Orchard, ”Flexible tree-structured signal expansions using time-varying wavelet packets”, *IEEE Trans. on Signal Processing*, Vol. 45, no. 2, pp. 333-345, Feb. 1997.

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30. R. Rajagopalan, M.T. Orchard, and K. Ramchandran, ”Optimal supports for linear predictive models”, *IEEE Trans. on Signal Proc.*, Vol. 44, no. 12, pp. 3150-3153, Dec. 1996.
31. Z. Xiong, O. Guleryuz and M. T. Orchard, “A DCT-based Embedded Image Coder”, *IEEE Signal Processing Letters*, vol. 3, no. 11, pp. 289-290, Nov., 1996.
32. A. Nosratinia, N. Mohsenian, M.T. Orchard,and B. Liu, ”Interframe coding of magnetic resonance images”, *IEEE Trans. Medical Imaging*, vol. 15, no. 5, Oct., 1996, pp. 639-647.
33. B. Usevitch and M.T. Orchard, “Adaptive filtering using filter banks,” *IEEE Trans. on Circuits and Systems - I: Analog and Digital Signal Processing*, vol. 43, no. 3, pp. 255-265, March 1996.
34. Z. Xiong, K. Ramchandran and M. T. Orchard, “Wavelet Image Coding Using Space-frequency Quantization”, *Electronic Imaging Newsletter*, Vol. 6, 1, pp. 3-4, January, 1996.
35. N. Mohsenian, A. Nosratinia, B. Liu, and M. Orchard, “Adaptive entropy constrained transform coding of magnetic resonance image sequences,” *IEEE Trans. Nuclear Science*, vol. 42, no. 6, Dec. 1995.
36. B. Usevitch and M. T. Orchard, “Smooth wavelets, transform coding, and markov-1 processes,” *IEEE Trans. on Signal Processing*, Vol. 43, no. 11, Nov. 1995.
37. M.T. Orchard and G.J. Sullivan, “Overlapped block motion compensation: an estimation-theoretic approach,” *IEEE Trans. on Image Processing*, vol. 3:5, pp. 693-699, September, 1994.
38. M.T. Orchard and A.K. Katsaggelos, “Backward Motion Compensation for Interlaced HDTV,” *Signal Processing: Image Communication*, Vol. 5, pp. 487-501, December 1993.
39. M.T. Orchard, “Predictive motion field segmentation for image sequence coding,” *IEEE Transactions on Circuits and Systems for Video Technology*, 3:1, pp. 54-70, February, 1993.
40. T.S. Huang and M.T. Orchard, “New paradigms for man-machine interaction through dynamic scene analysis and synthesis,” *Jour. of the Inst. of Image Elect. Eng. of Japan*, 100th edition invited essay, October, 1992.
41. M. Orchard, “Fast bit-reversal algorithms based on index representations in GF(2^b),” *IEEE Transactions on Signal Processing*, 40:4, 1004-1008, April 1992.
42. M.T. Orchard and C.A. Bouman, “Color quantization of images.” *IEEE Transactions on Signal Processing*, 39:12, 2677-2690, December 1991.

Patents:

1. C.A. Bouman and M.T. Orchard, “Color image display with a limited palette size,” U.S. Patent No. 5,047,842 granted (1991)
2. M. Orchard, H. Jafarkhani, A. R. Reibman, and Y. Wang, ”Method and apparatus for accomplishing multiple description coding for video”, U.S. Patent No. 6,556,624 granted (2003)

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3. H. S. Stone, M. T. Orchard, EE-C. Chang, and S. Martucci, ”Method for subpixel registration of images”, U.S. Patent No. 6,628,845 granted (2003)
4. H. Jafarkhani, M. Orchard, A. R. Reibman, and Y. Wang, “Multiple description coding communication system”, U.S. Patent No. 6,823,018 granted (2004)
5. M. Orchard, H. Jafarkhani, A. R. Reibman, and Y. Wang, ”Method and apparatus for accomplishing multiple description coding for video”, U.S. Patent No. 6,920,177 granted (2005)
6. H. Jafarkhani, M. Orchard, A. R. Reibman, and Y. Wang, “Multiple description coding communication system”, U.S. Patent No. 7,289,565 granted (2007)
7. H. Jafarkhani, M. Orchard, A. R. Reibman, and Y. Wang, “Multiple description coding communication system”, U.S. Patent No. 8,594,205 granted (2013)

Conference Publications:

1. Lantao Yu and M.T. Orchard, “Accurate edge location identification based on location-directed image modeling”, *IEEE Int. Conf. on Image Processing*, paper 3606, Taipei, Taiwan, Sept., 2019
2. Lantao Yu and M.T. Orchard, “When spatially-variant filtering meets low-rank regularization: exploiting non-local similarity for single image interpolation”, paper 3833, Taipei, Taiwan, Sept., 2019
3. Lantao Yu and M.T. Orchard, “Single image interpolation exploiting semi-local similarity”, *2019 IEEE Int. Conf. on Acoustics, Speech, and Signal Processing,* pp. 1722-1726, May, 2019
4. Lantao Yu and M.T. Orchard, “Location-directed image modeling and its application to image interpolation”, *2018 IEEE Int. Conf. on Image Processing (ICIP)*, pp. 2192-2196, Sept., 2018
5. G. Hua and M.T. Orchard, ”Image representation from the phase or magnitude of its complex wavelet transform”, *IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*, pp. 3261-3264, April, 2008.
6. G. Hua and M.T. Orchard, ”Image inpainting based on geometrical modeling of complex wavelet coefficients”, *IEEE Int. Conf. on Image Processing*, vol. 1, pp. 553-556, Sept., 2007.
7. H.F. Ates and M.T. Orchard, ”Wavelet Image Coding Using the Spherical Representation”, *IEEE International Conference on Image Processing (ICIP)*, Genova, Italy, vol. 1, pp. 89- 92, Sept. 2005.
8. G. Hua and M.T. Orchard, ”A new interpretation of translation invariant denoising”, *IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*, vol. 3, pp. 189-192, May, 2004.
9. H.F. Ates, M.T. Orchard, ”A Nonlinear Image Representation in Wavelet Domain Using Complex Signals With Single Quadrant Spectrum”, *37th Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, CA, Nov. 2003.

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10. H.F. Ates, M.T. Orchard, ”Nonlinear Modeling of Wavelet Coefficients Around Edges”, *Proc. of Int. Conf. on Image Processing*, Barcelona, Spain, Sept. 2003.
11. H.F. Ates, M.T. Orchard, ”Image Interpolation Using Wavelet-based Contour Estimation”, *ICME’03*, Baltimore, MD, July, 2003.
12. Michael Orchard, ”On Modeling Location Uncertainty in Images,” *Int. Conf. on Image Processing*, Thessaloniki, Greece, Oct., 2001.
13. A. Reibman, H. Jafarkhani, Y. Wang, and M. Orchard, ”Multiple Description Video Using Rate-distortion Splitting,” *Int. Conf. on Image Processing*, Thessaloniki, Greece, Oct., 2001.
14. X. Wang and M. T. Orchard, ”Design of superposition coded modulation for unequal error protection,” *Proc. Int. Conf. on Comm.*, Helsinki, Finland, June 2001
15. X. Wang and M. T. Orchard, ”On reducing the rate of retransmission in time-varying channels,” *Proc. Conf. on Inform. Sciences and Systems*, Balt. MD, Mar. 2001
16. X. Wang and M. T. Orchard, ”Design of trellis codes for source coding with side information at the decoder,” *Proc. Data Compression Conf.*, Snowbird, UT, Mar. 2001.
17. Xin Li and Michael Orchard, ”A Novel Sequential Error Concealment Technique based on Edge Directed Interpolation” *Proc. Of SPIE Conf. On Video Comm. And Image Proc.*, San Jose, CA, Jan. 2001.
18. Xin Li and Michael Orchard, ”Edge Enhancement Techniques for Inverse Halftoning of Error-Diffused Images” *34rd Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, CA, Oct 2000.
19. Xin Wang and M. T. Orchard, ”Multiple description coding using trellis-coded quantization,” *Proc. of Int. Conf. on Image Processing*, Vancouver, BC. Sept. 2000
20. Xin Li and Michael Orchard, ”New Edge Directed Interpolation”, *Proc. of Int. Conf. on Image Processing*, Vancouver, BC. Sept. 2000.
21. Xin Li and Michael Orchard, ”Spatially Adaptive Image Denoising Under Overcomplete Expansion” , *Proc. of Int. Conf. on Image Processing*, Vancouver, BC. Sept. 2000.

Research Interests:

Nonlinear manifolds models for images and video;
Image and video compression; Motion estimation, motion compensation;
Robust transmission of images and video: multiple description video coding;
Multi-resolutional representation of images and video;
Digital watermarking of multimedia sources;
Model-based representation and compression of video;
Image rendering, Color quantization.
Nonlinear manifolds models for images and video;

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Representative Expert Witness Experience:

1. JVC v. Corel Corp.
   Years: 2008 - 2010
   Client: Corel
   Court: US District Court, Western District of Texas (Austin)
   Activities: presented tutorial & testified in claim construction hearing

2. St. Clair Int. Prop. v. Kyocera, et al.
   Years: 2010 - 2011
   Clients: Kyocera Wireless, Kyocera Sanyo Telecom, Palm, Inc.
   Court: US District Court, Delaware
   Activities: authored expert report; gave deposition

3. Motorola Mobility v. Microsoft
   Years: 2011 - 2012
   Client: Microsoft
   Court: US International Trade Commission
   Activities: authored expert report; gave deposition; testified at trial

4. Motorola Mobility v. Microsoft
   Years: 2010 - 2012
   Client: Microsoft
   Court: US District Court, Seattle
   Activities: authored expert report; gave deposition; testified at trial

5. Emblaze Ltd. v. Apple
   Years: 2013 - 2014
   Client: Apple
   Court: US District Court, Northern District of California, San Jose
   Activities: authored expert report; gave deposition; testified at trial

6. Industrial Print Technologies, LLC v. Hewlett-Packard
   Years: 2015 - present
   Client: Hewlett-Packard
   Court: US District Court, Northern District of Texas, Dallas
   Activities: authored declarations & expert reports; gave depositions;

7. Biscotti, Inc. v. Microsoft
   Years: 2014 - 2017
   Client: Microsoft
   Court: US District Court, Eastern District of Texas, Marshall
   Activities: authored expert reports; gave depositions; testified at trial

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8. Broadcom Corp. v. MediaTek Inc. et. al.
   Years: 2017-2018
   Client: MediaTek Inc., MStar Semiconductor Inc.
   Court: US International Trade Commission
   Activities: authored expert report

9. Qualcomm Inc. v. Apple, Inc.
   Years: 2018
   Client: Apple
   Court: PTAB
   Activities: authored declaration in support of IPR petition

10. Unified Patents v. KAIST
   Years: 2019
   Client: Unified Patents
   Court: PTAB
   Activities: authored declaration in support of two IPR petitions

11. WSOU Investments LLC v. Microsoft
   Years: 2020 - 2021
   Client: Microsoft
   Court: US District Court, Western District of Texas, Waco
   Activities: authored invalidity expert report

12. Broadcom Corp. V. Netflix, Inc.
   Years: 2020 - 2023
   Client: Netfilx
   Court: US District Court, Northern District of California, San Francisco
   Activities: authored declaration & court testimony (tutorial w/questions) in support of claim construction

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Professor Michael Orchard
Rice University
Experience: Expert Witness on Patent Cases, 2017 - 2024

1. Industrial Print Technologies, LLC v. Hewlett-Packard
   Years: 2015 - ???
   Client: Hewlett-Packard
   Law Firm: Weil, Gotshal & Manges LLP
   (Audrey Maness)
   Court: US District Court, Northern District of Texas, Dallas
   Activities: authored declarations & expert reports; gave depositions; prepared for trial

2. Biscotti, Inc. v. Microsoft
   Years: 2014 - 2017
   Client: Microsoft
   Law Firm: Sidley Austin, LLP
   (Irene Yang, Mike Bettinger)
   Court: US District Court, Eastern District of Texas, Marshall
   Activities: authored expert reports; gave depositions; testified at trial

3. Broadcom Corp. v. MediaTek Inc. et. al.
   Years: 2017-2018
   Client: MediaTek Inc., MStar Semiconductor Inc.
   Law Firm: Fish & Richardson, P.C.
   (Michael Arturo, Tony Nguyen)
   Court: US International Trade Commission
   Activities: authored expert report

4. Unified Patents v. KAIST
   Years: 2019
   Client: Unified Patents
   Law Firm: Akin Gump Strauss Hauer & Feld, LLP
   Court: PTAB
   Activities: authored declaration in support of two IPR petitions

5. WSOU Investments LLC v. Microsoft
   Years: 2020 - 2021
   Client: Microsoft
   Law Firm: Sidley Austin, LLP
   (Irene Yang)
   Court: US District Court, Western District of Texas, Waco

Activities: authored invalidity expert report

6. Broadcom Corp. v. Netflix, Inc.
   Years: 2020 - 2024
   Client: Netfilx
   Law Firm: Keker, Van Nest & Peters, LLP
   (Thomas E. Gorman, Paven Malhotra)
   Court: US District Court, Northern District of California, San Francisco
   Activities: authored declaration & court testimony (tutorial w/questions) in support of claim construction, authored expert report, gave deposition

7. VideoLabs, Inc. v. ASUSTek Comp. Inc., et. al.
   Years: 2022 - 2023
   Client: ASUSTek Comp. Inc.
   Law Firm: Fish & Richardson P.C.
   (Joseph Colaianni, Linhong Zhang)
   Court: US International Trade Commission, Inv. No. 337-TA-1323
   Activities: authored expert report, gave deposition

8. General Video, LLC v. ASUSTek Computer Malaysia SDN BHD, et. al.
   Years: 2022 - 2023
   Client: ASUSTek Computer Malaysia SDN BHD
   Law Firm: Chooi & Company + Cheang & Ariff
   Court: High Court of Malaya at Kuala Lumpur, Suit No. WA-22IP-58-09/2020
   Activities: authored expert report, testified at trial