Curriculum Vitae
ALEXANDER M. HAIMOVICH, Ph.D.

Country of citizenship: USA

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I. Education:

Ph.D. (Systems)	1989	University of Pennsylvania
M.S.E.E.	1983	Drexel University
B.S.E.E. (Cum Laude)	1977	Israel Institute of Technology (Technion)

II. Expertise/Research Interests

Wireless communication including LTE, WCDMA, WiMax, MIMO; 4G-5G wireless communication systems; geolocation in multipath, multi-sensor radar; signal characterization and identification in multiple antenna systems; cloud radar – joint design of sensing and communication in distributed radar systems; antenna arrays.

III. Appointments

Academic Appointments:

Distinguished Professor		since 2014
Director, Center for Wireless Information Processing		since 2013
Ying Wu Endowed Chair		since 2011
Professor		2001-2014
Visiting Fellow	Princeton University	2008-2009
Director, New Jersey Center for Wireless Telecommunications		2003-2005
Associate Professor,		1992-2001
Special Lecturer,		1987-1989

Non-academic Employment:

Chief Scientist	JJM Systems Inc., Ivyland, PA	1990-1992
Senior Staff Consultant	AEL Industries, Lansdale, PA	1989-1990
Senior Engineer	AEL Industries, Lansdale, PA	1983-1987

IV. Honors and Awards

Ying Wu Endowed Chair, NJIT, ECE	since 2011
IEEE Fellow	since 2013

Petitioners' Exhibit 1004, p. 1
AT&T et al v. ASUS Technology & Celerity
IPR2024-01142

V. Consulting

Expert Patent Consulting and Litigation

McKool Smith (representing Ericsson) 2022
Apple v. Ericsson, Case No. IPR2022-00457
Declaration in defense of Ericsson

Sidley Austin LLP (representing Magna International) 2021-2022
Panasonic Corp. v. Magna International Inc., No. 6:21-cv-00319
Consulting on validity and infringement of automobile radar

McKool Smith (representing Ericsson) 2021-2022
Regents of the University of Minnesota v. AT&T Mobility LLC, Ericsson, Inc., and Alcatel-Lucent USA Inc.,
Civil Action No. 14-cv-4666 JRT-TNL
Validity and infringement consulting on various aspects of 5G technology

McKool Smith (representing Ericsson) 2021
5G Essentiality Project – analysis of 5G essentiality of 200 patents

McKool Smith (representing Ericsson) 2021
Ericsson Inc. and Telefonaktiebolaget LM Ericsson v. Samsung Electronics Co., Ltd., et al. Civil Action No. 2:20-cv-00380 JRG (E.D. Tex)
Validity and infringement consulting on various aspects of 5G technology

McKool Smith (representing Ericsson) 2019
Sol IP, LLC v. AT&T Mobility LLC., 2:18-cv-00526 (E.D. Tex.)
Consulting on various aspects of LTE technology

McKool Smith (representing Ericsson) 2018
HTC Corporation and HTC America, Inc., v. Telefonaktiebolaget LM Ericsson and Ericsson Inc., 6:18-cv-00243 (E.D. Tex.)
Consulting on essentiality of LTE patents

McKool Smith (representing PanOptis) 2016-2018
Optis Cellular Technology, LLC and PanOptis Patent Management v. Huawei Device Co.
Eastern district of Texas, Marshal division, Case No. 2:17-cv-123-JRG-RSP
Patent infringement LTE
Testified in court in bench trial
Claim construction declaration
Expert report on essentiality of PanOptis patents to LTE standard
Deposition on report on essentiality of PanOptis patents to LTE standard

McKool Smith (representing Ericsson) 2015-2016
Eastern district of Texas, Marshal division, Case No. 2:17-cv-123-JRG-RSP
Regents of the University of Minnesota v AT&T Mobility, LLC
District of Minnesota, Civil Action No. 14-cv-4666,

Patent Infringement, LTE, MIMO
Non-infringement and invalidity consulting

McKool Smith (representing Panasonic) 2015
Review essential patents for 3G and 4G

McKool Smith (representing Ericsson) 2015
TCL Communication Technology Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson, et al. v., No. 8:14-CV-00341 JVS AN (C.D. Cal.)
Non-infringement and invalidity consulting

McKool Smith (representing Wi-LAN) 2013-2014
Wi-Lan vs. Apple and Defendants, Wi-LAN, Inc. v. Apple, Inc. , et aI., Cause No. 6:11-CV-453 (E.D. Tex.) and Wi-LAN, Inc. v. HTC Corporation, et aI., Cause No.2: ll-CV -68 (E.D. Tex.)
Patent infringement, invalidity, OFDM
Expert report on infringement
Expert report on validity
Deposition on infringement declaration
Deposition on validity declaration

McKool Smith (representing Wi-LAN) 2013-2014
Wi-Lan vs. Research in Motion, Case No. 1:12-CV-20232-PAS, on behalf of Wi-Lan
Infringement and validity consulting

McKool Smith (representing Wi-LAN) 2008-2009
Wi-Lan, Inc. v. Acer, Inc. et al. 2-07CV-473 and Wi-LAN, Inc. v. Westell Technologies, Inc. 2-07CV-474
Expert report on claim construction
Deposition on claim construction declaration

Howrey LLC (representing Qualcomm) 2008
Broadcom Corp. v. Qualcomm Case No. SAC05-467-JVS,
Invalidity consulting

Howrey LLC (representing RIM) 2007
Research in Motion Corporation v. DataQuill BVI, Ltd., Case No. 3-06-CV-0973-N
Invalidity consulting

Howrey LLC (representing Qualcomm) 2006-2007
Qualcomm Inc. v. Broadcom Corp. Case NO. 05-CV-1662B
Invalidity declaration
Deposition on invalidity declaration

VI. Publications

Petitioners' Exhibit 1004, p. 3
AT&T et al v. ASUS Technology & Celerity
IPR2024-01142

Refereed Journal Articles Published

1. W. Jiang, A. M. Haimovich and O. Simeone, "Joint Design of Radar Waveform and Detector via End-to-End Learning With Waveform Constraints," in IEEE Transactions on Aerospace and Electronic Systems, vol. 58, no. 1, pp. 552-567, Feb. 2022, doi: 10.1109/TAES.2021.3103560.

2. Y. Li, Q. He, R. S. Blum and A. M. Haimovich, "Receiver Design With Reduced DOF in Frequency Domain for Target Detection Under Gaussian Clutter," in IEEE Transactions on Signal Processing, vol. 69, pp. 3315-3324, 2021, doi: 10.1109/TSP.2021.3082463.

    a. Dong, O. Simeone, A. M. Haimovich and J. A. Dabin, "Blind Sparse Estimation of Intermittent Sources Over Unknown Fading Channels," in IEEE Transactions on Vehicular Technology, vol. 68, no. 10, pp. 9861-9871, Oct. 2019, doi: 10.1109/TVT.2019.2933996.

3. D. Cohen, D. Cohen, Y. C. Eldar and A. M. Haimovich, "SUMMeR: Sub-Nyquist MIMO Radar," in IEEE Transactions on Signal Processing, vol. 66, no. 16, pp. 4315-4330, 15 Aug.15, 2018, doi: 10.1109/TSP.2018.2838541.

4. M. Yang, A. M. Haimovich, X. Yuan, L. Sun and B. Chen, "A Unified Array Geometry Composed of Multiple Identical Subarrays With Hole-Free Difference Coarrays for Underdetermined DOA Estimation," in IEEE Access, vol. 6, pp. 14238-14254, 2018, doi: 10.1109/ACCESS.2018.2813313.

5. W. Jiang and A. M. Haimovich, "Cramer–Rao Bound for Noncoherent Direction of Arrival Estimation in the Presence of Sensor Location Errors," in *IEEE Signal Processing Letters*, vol. 24, no. 9, pp. 1303-1307, Sept. 2017.

6. N. Garcia, H. Wymeersch, E. G. Larsson, A. M. Haimovich and M. Coulon, "Direct Localization for Massive MIMO," in *IEEE Transactions on Signal Processing*, vol. 65, no. 10, pp. 2475-2487, May15, 15 2017.

7. S. Khalili *et al*., "Code-Aided Channel Tracking and Decoding Over Sparse Fast-Fading Multipath Channels With an Application to Train Backbone Networks," in *IEEE Transactions on Intelligent Transportation Systems*, vol. 18, no. 3, pp. 481-492, March 2017.

8. Y. Liu, O. Simeone, A. M. Haimovich and W. Su, "Modulation Classification for MIMO-OFDM Signals via Approximate Bayesian Inference," in *IEEE Transactions on Vehicular Technology*, vol. 66, no. 1, pp. 268-281, Jan. 2017.

9. Y. Liu et al., "Topology Discovery for Linear Wireless Networks With Application to Train Backbone Inauguration," in IEEE Transactions on Intelligent Transportation Systems, vol. 17, no. 8, pp. 2159-2170, Aug. 2016.

10. S. Jeong, O. Simeone, A. Haimovich and J. Kang, "Positioning via direct localisation in C-RAN systems," in IET Communications, vol. 10, no. 16, pp. 2238-2244, 11 3 2016.

Petitioners' Exhibit 1004, p. 4
AT&T et al v. ASUS Technology & Celerity
IPR2024-01142

11. S. Jeong, O. Simeone, A. Haimovich and J. Kang, "Optimal Fronthaul Quantization for Cloud Radio Positioning," in IEEE Transactions on Vehicular Technology, vol. 65, no. 4, pp. 2763-2768, April 2016.

12. Liu, Y., Simeone, O., Haimovich, A. M., Su, W. (2014). Modulation classification via Gibbs sampling based on a latent Dirichlet Bayesian network. IEEE Signal Processing Letters, 21(9), 1135-1139.

13. V. M. Chiriac, Q. He, A. M. Haimovich and R. S. Blum, "Ziv–Zakai Bound for Joint Parameter Estimation in MIMO Radar Systems," in IEEE Transactions on Signal Processing, vol. 63, no. 18, pp. 4956-4968, Sept.15, 2015.

14. H. Kim, A. M. Haimovich and Y. C. Eldar, "Non-Coherent Direction of Arrival Estimation from Magnitude-Only Measurements," in IEEE Signal Processing Letters, vol. 22, no. 7, pp. 925-929, July 2015.

15. Khalili, S.; Simeone, O.; Haimovich, A.M., "Cloud Radio-Multistatic Radar: Joint Optimization of Code Vector and Backhaul Quantization," Signal Processing Letters, IEEE , vol.22, no.4, pp.494,498, April 2015.

16. Liu, Y.; Simeone, O.; Haimovich, A.M.; Su, W., "Modulation Classification via Gibbs Sampling Based on a Latent Dirichlet Bayesian Network," Signal Processing Letters, IEEE , vol.21, no.9, pp.1135,1139, Sept. 2014.

17. Garcia, N.; Haimovich, A.M.; Coulon, M.; Lops, M., "Resource Allocation in MIMO Radar With Multiple Targets for Non-Coherent Localization," *Signal Processing, IEEE Transactions on* , vol.62, no.10, pp.2656,2666, May15, 2014

18. Rossi, M.; Haimovich, AM.; Eldar, Y.C., "Spatial Compressive Sensing for MIMO Radar," Signal Processing, IEEE Transactions on , vol.62, no.2, pp.419-430, Jan.15, 2014.

19. Qian He; Blum, R.S.; Haimovich, A.M.; , "Noncoherent MIMO Radar for Location and Velocity Estimation: More Antennas Means Better Performance," Signal Processing, IEEE Transactions on , vol.58, no.7, pp.3661-3680, July 2010

20. Bo Niu; Simeone, O.; Somekh, O.; Haimovich, A.M.; , "Ergodic and Outage Performance of Fading Broadcast Channels With 1-Bit Feedback," Vehicular Technology, IEEE Transactions on , vol.59, no.3, pp.1282-1293, March 2010

21. Shengshan Cui; Haimovich, A.M.; Somekh, O.; Poor, H.V.; Shamai, S.; , "Throughput Scaling of Wireless Networks With Random Connections," Information Theory, IEEE Transactions on , vol.56, no.8, pp.3793-3806, Aug. 2010

22. Godrich, H.; Haimovich, A.M.; Blum, R.S.; , "Target Localization Accuracy Gain in MIMO Radar-Based Systems," Information Theory, IEEE Transactions on , vol.56, no.6, pp.2783-2803, June 2010

Petitioners' Exhibit 1004, p. 5
AT&T et al v. ASUS Technology & Celerity
IPR2024-01142

23. He, Qian; Lehmann, Nikolaus H.; Blum, Rick S.; Haimovich, Alexander M.; , "MIMO Radar Moving Target Detection in Homogeneous Clutter," Aerospace and Electronic Systems, IEEE Transactions on , vol.46, no.3, pp.1290-1301, July 2010

24. Qian He; Blum, R.S.; Godrich, H.; Haimovich, A.M.; , "Target Velocity Estimation and Antenna Placement for MIMO Radar With Widely Separated Antennas," Selected Topics in Signal Processing, IEEE Journal of , vol.4, no.1, pp.79-100, Feb. 2010

25. J. Li, R. S. Blum, P. Stoica, A. M. Haimovich, and M. C. Wicks, "Introduction to the Issue on MIMO Radar and Its Applications", IEEE Journal of Selected Topics in Signal Processing, Vol. 4, Issue 1, pp. 79-100, Feb. 2010.

26. Shengshan Cui; Haimovich, A.M.; Somekh, O.; Poor, H.V.; , "Opportunistic Relaying in Wireless Networks," Information Theory, IEEE Transactions on , vol.55, no.11, pp.5121-5137, Nov. 2009

27. Godrich, H.; Haimovich, A.M.; Blum, R.S.; , "Target localisation techniques and tools for multiple-input multiple-output radar," Radar, Sonar & Navigation, IET , vol.3, no.4, pp.314-327, August 2009

28. Somekh, O.; Simeone, O.; Bar-Ness, Y.; Haimovich, A.M.; Shamai, S., "Cooperative Multicell Zero-Forcing Beamforming in Cellular Downlink Channels," *Information Theory, IEEE Transactions on* , vol.55, no.7, pp.3206-3219, July 2009.

29. A.M. Haimovich, R.S. Blum, L.J. Cimini Jr., "MIMO radar with widely separated antennas: Review of some recent work," *IEEE Signal Processing Magazine,* vol. 25, 2008, pp. 116-129.

30. H. Sheng and A.M. Haimovich, "Impact of channel estimation on ultra-wideband system design," *IEEE Journal of Selected Topics in Signal Processing,* Volume 1, Oct. 2007, pp. 498 - 507.

31. Somekh, A.M. Haimovich, and Y. Bar-Ness, "Sum-rate analysis of downlink channels with 1-bit feedback," *IEEE Communications Letters,* vol. 11, Feb. 2007, pp. 137-139.

32. J. Luo, R. S. Blum, L. J. Cimini, Jr., L. J. Greenstein, and A. M. Haimovich, "Decode-and-forward cooperative diversity with power allocation in wireless network," *IEEE Transactions on Wireless Communications*, vol. 6, March 2007, pp. 793-799.

33. H. Chen, A.M. Haimovich, J.A. Sjogren, "Turbo Space-Time Codes with Time Varying Linear Transformations," *IEEE Transactions on Wireless Communications,* vol. 6, Feb. 2007, pp. 486-493.

34. N. Lehmann, E. Fishler, A.M. Haimovich, R.S. Blum, D. Chizhik, L. Cimini, R. Valenzuela, "Evaluation of transmit diversity in MIMO-radar direction finding," *IEEE Transactions on Signal Processing,* vol. 55, May 2007, pp. 2215-2225.

Petitioners' Exhibit 1004, p. 6
AT&T et al v. ASUS Technology & Celerity
IPR2024-01142

35. X. Deng and A.M. Haimovich, "Achievable rates over time-varying Rayleigh fading channels," *IEEE Transactions on Communications,* vol. 55, July 2007, pp. 1397-1406.

36. C. Gao, A.M. Haimovich, Debang Lao, "Multiple-symbol differential detection for MPSK space-time block codes: decision metric and performance analysis," *IEEE Transactions on Communications*, *IEEE Transactions on Communications,* vol. 54, August 2006, pp. 1502-1510.

37. E. Fishler, A. Haimovich, R. Blum, L. Cimini, D. Chizhik, and R. Valenzuela, "Spatial Diversity in Radars - Models and Detection Performance," *IEEE Trans. on Sig. Proc.*, vol. 54, March 2006, pp. 823-838.

38. J. A. Dabin, A.M. Haimovich, H. Grebel, "A Statistical Ultrawideband indoor channel model and the effects of antenna directivity on path loss and multipath propagation." *IEEE Transactions on Selected Areas in Communications*, *Special Issue on Ultra-Wideband Communications,* vol. 24, April 2006, pp. 752-758.

39. R.D. Souza, J. Garcia-Frias, and A. Haimovich, "Semi-Blind Receivers for Space-Time Coded Modulation and Quasi-Static Frequency Selective Fading Channels," *IEEE Trans. on Vehicular Technology*, vol. 55, July 2006, pp. 1259-1268.

40. Deng and A.M. Haimovich, "Power allocation for cooperative relaying in wireless networks," *IEEE Communications Letters, Vol.* 9, Nov. 2005, pp. 994 – 996.

41. J. Luo, R. S. Blum, L. J. Cimini, Jr., L. J. Greenstein, and A. M. Haimovich, "Power allocation in a transmit diversity system with mean channel gain information," *IEEE Communications Letters*, vol. 9, no. 6, July 2005

42. A.F. Molisch, Y.P. Nakache, P. Orlik, J. Zhang, Y. Wu, S. Gezici, S.Y. Kung, H. Kobayashi, H.V. Poor, Y.G. Li, H. Sheng, and A. Haimovich, "An efficient low-cost time-hopping impulse radio for high data rate transmission," EURASIP J. Applied Signal Processing, vol. 2005, no. 3, pp. 397–412, Mar. 2005.

43. Luc Vandendorpe, Alex M. Haimovich, Ramesh Pyndiah, "Editorial," EURASIP Journal on Applied Signal Processing 2005:6, 759–761.

44. H. Chen and A. M. Haimovich, "EXIT Charts for Turbo Trellis Coded Modulation," *IEEE Commun. Letters, vol. 8, Nov. 2004, pp. 668-670*.

45. Lao and A. M. Haimovich, "Symbol Error Probability and Bit Error Probability for Optimum Combining with MPSK Modulation," *IEEE Trans. on Commun. Vol. 52,* Aug. 2004, pp. 1276-1281.

46. D. Lao and A.M. Haimovich, "Exact Average Symbol Error Probability of Optimum Combining with Arbitrary Interference Power," *IEEE Communications Letters*, vol: 8, Issue: 4, April 2003, pp. 226-228.

Petitioners' Exhibit 1004, p. 7
AT&T et al v. ASUS Technology & Celerity
IPR2024-01142

47. H. Chen and A.M. Haimovich, “Iterative Estimation and Cancellation of Clipping Noise for OFDM Signals,” *IEEE Communications Letters,* Vol. 7, July 2003, pp 305-307.

48. Gao and A.M. Haimovich, “BER Analysis of MPSK Space-time Block Codes with Differential Detection,” *IEEE Communications Letters*, Vol. 7, July 2003, pp 314 -316.

49. D. Lao and A.M. Haimovich, “Exact Closed-form Performance Analysis of Optimum Combining with Multiple Cochannel Interferers and Rayleigh Fading,” *IEEE Transactions on Communications*, Vol. 51, June 2003, pp 995 -1003.

50. D. Lao and A.M. Haimovich, "Multiple-Symbol Differential Detection with Interference Suppression," *IEEE Transactions on Communication,* Vol. 51, Feb 2003, pp 208-217.

51. L. Zhao and A.M. Haimovich, "Performance of Ultra-Wideband Communications in the Presence of Interference," *IEEE Journal on Selected Areas Special issue on “Ultra Wide Band Radio in Multi-Access Wireless Communications,”* vol. 20, Dec. 2002, pp. 1684-1691.

52. D. Cui, A.M. Haimovich and H. Chen, "Parallel Concatenated Turbo Multiple Antenna Coded Modulation: Principles and Performance," *Wiley Journal on Wireless Communications and Mobile Computing Special Issue: Adaptive Antennas and MIMO Systems,*" vol. 2, Nov. 2002, pp. 735-751.

53. D. Cui and A.M. Haimovich, “Performance of Parallel Concatenated Space-Time Codes," *IEEE Communications Letters,* June 2001, pp. 236-238.

54. Z. Baranski and A.M. Haimovich, “Performance Analysis of VPSK Digital Modulation" *Wireless Personal Communications,* 19: 139-145, 2001.

55. Array Processing for Wireless Communications with Applications to IS-54/IS-136," *IEEE Transactions on Communications*, vol. 48, May 2000, pp. 743-747.

56. Amit Shah A.M. Haimovich, M.K. Simon, and M.S. Alouini, “Exact Bit Error Probability for Optimum Combining with a Rayleigh Fading Co-Channel Interferer," IEEE Transactions on Communications, vol. 48, June 2000, pp. 908-912.

57. C.D. Peckham, A.M. Haimovich, T. Ayoub, J.S. Goldstein, I.S. Reed, “Reduced-Rank STAP Performance Analysis," *IEEE Transactions on Aerospace and Systems,* vol. 36, April 2000, pp. 664-676.

58. Ayoub and A.M. Haimovich, “A Modified GLRT Signal Detection Algorithm,*" IEEE Transactions on Aerospace and Electronic Systems*, vol. 36, July 2000, pp. 810-818.

59. Amit Shah and A.M. Haimovich, “A Performance Comparison of Optimum Combining and Maximal Ratio for Digital Cellular Mobile Radio Communication Systems with Cochannel Interference," *IEEE Transactions on Vehicular Technology*, vol. 49, July 2000, pp. 1454-1463.

Petitioners' Exhibit 1004, p. 8
AT&T et al v. ASUS Technology & Celerity
IPR2024-01142

60. Ye and A.M. Haimovich, “Performance of Cellular CDMA with Cell Site Antenna Arrays, Rayleigh Fading and Power Control Error," *IEEE Transactions on Communications*, vol. 48, July 2000, pp. 1151-1159.

61. T, Ayoub, M.L. Pugh, A.M. Haimovich, “Reduced-Rank STAP for High PRF Radar,*" IEEE Transactions on Aerospace and Electronic Systems*, vol. 35, July 1999, pp. 953-962.

62. A.M. Haimovich, M.O. Berin, J.G. Teti, Jr., “A Sampling Based Approach to Wideband Interference Cancellation," *IEEE Transactions on Aerospace and Electronic Systems*, vol. 34, Jan. 1998, pp. 2-12.

63. A.M. Haimovich and A. Shah, “The Performance of Space-Time Processing for Suppressing Narrowband Interference in CDMA Communications," *Wireless Personal Communication*, 7:2-3, June 1998, pp. 233-255.

64. Amit Shah and A.M. Haimovich, “Space-Time Optimum Combining for CDMA Overlay for Personal Communication Systems," *Wireless Personal Communications*, 6:3, March 1998, pp. 295-309.

65. Amit Shah and A.M. Haimovich, “Performance Analysis of Optimum Combining in Wireless Communications with Rayleigh Fading and Cochannel Interference,*" IEEE Transactions on Communications*, vol. 46, April 1998, pp. 473-479.

66. W. Ye, A.M. Haimovich, “Outage Probability of Cellular CDMA Systems with Space Diversity, Rayleigh Fading, and Power Control Error," *IEEE Communications Letters* , vol. 2, August 1998, pp. 220-222.

67. A.M. Haimovich, “Asymptotic Distribution of the Conditioned Signal-to-Noise Ratio in an Eigenanalysis-Based Adaptive Array," *IEEE Transactions on Aerospace and Electronic Systems*, July 1997, pp. 988-996.

68. W. Ye, X. Bernstein, A.M. Haimovich, “Near-Far Resistance of Space-Time Processing for Wireless CDMA Communications," *IEEE Communications Letters*, July 1997, pp. 105-107.

69. A.M. Haimovich and M. Berin, “Eigenanalysis-Based Space-Time Adaptive Radar: Performance Analysis," *IEEE Transactions on Aerospace and Electronic Systems*, vol. 33, October 1997, pp. 1170-1179.

70. Albert Futernik and A.M. Haimovich, “Performance of Adaptive Radar in Range-Heterogenous Clutter," *J. Franklin Inst*., vol. 335B, pp. 71-87, 1997.

71. X. Bernstein and A.M. Haimovich “Space-Time Optimum Combining for CDMA Communications," *Wireless Personal Communication, Special Issue on Signal Separation and Interference Cancellation for Personal, Indoor and Mobile Radio Communications*, vol. 3, 1996, pp. 73-89.

72. A.M. Haimovich “The Eigencanceler: Adaptive Radar by Eigenanalysis Methods,*" IEEE Transactions on Aerospace and Electronic Systems*, vol. 32, April 1996, pp. 532-542.

Petitioners' Exhibit 1004, p. 9
AT&T et al v. ASUS Technology & Celerity
IPR2024-01142

73. A.M. Haimovich and Y. Bar-Ness "On the Performance of a Stochastic Gradient-Based Decorrelation Algorithm for Multiuser Multicarrier CDMA," Wireless Personal Communications, 2:357-371, 1996.

74. A.M. Haimovich, J. Yosko, R.J. Greenberg, M.A. Parisi, D. Becker, "Fusion of Sensors with Dissimilar Measurement/Tracking Accuracies," *IEEE Transactions on Aerospace and Electronic Systems*, vol. 29, Jan. 1993, pp. 545-250.

75. A.M. Haimovich, Y. Bar-Ness, "An Eigenanalysis Interference Canceler," *IEEE Transactions on Acoustics, Speech and Signal Processing*, Jan. 1991, pp. 76-84.

76. Y. Bar-Ness, A.M. Haimovich, "Synthesis of Random Antenna Array Patterns with Prescribed Nulls," *IEEE Transactions on Antenna and Propagation*, vol. AP. 32, Dec. 1984, pp. 1298-1307.

Books

1. De Maio, Antonio, Yonina C. Eldar, and Alexander M. Haimovich, eds. *Compressed sensing in radar signal processing*. Cambridge University Press, 2019.

Book Chapters

1. H. Godrich, A.M. Haimovich, R.S. Blum, Concepts and Applications of a MIMO Radar System with Widely Separated Antennas, book chapter in MIMO Radar Signal Processing, John Wiley 2009.

2. O. Somekh, O. Simeone, Y. Bar-Ness, A.M. Haimovich, U. Spagnolini, and S. Shamai, An Information Theoretic View of Distributed Antenna Processing in Cellular Systems, in Distributed Antenna Systems: Open Architecture for Future Wireless Communications, Auerbach Publications, 2007.

Tutorials

MIMO radar tutorial 2009 IEEE Radar Conference
MIMO radar tutorial at 2008 International Conference on Acoustics and Signal Processing (ICASSP).

Conference Papers

1. K. P. Wensell, J. Zhou, A. M. Haimovich, E. A. Young and L. T. Vo, "Learning of Doppler Tolerant Radar Detectors for Noise Waveforms," 2023 57th Annual Conference on Information Sciences and Systems (CISS), Baltimore, MD, USA, 2023, pp. 1-5, doi: 10.1109/CISS56502.2023.10089751.

Petitioners' Exhibit 1004, p. 10
AT&T et al v. ASUS Technology & Celerity
IPR2024-01142

2. Ghosh, A. M. Haimovich and J. A. Dabin, "Interference Mitigation in Blind Source Separation by Hidden State Filtering," 2023 57th Annual Conference on Information Sciences and Systems (CISS), Baltimore, MD, USA, 2023, pp. 1-6, doi: 10.1109/CISS56502.2023.10089636.

3. W. Jiang, A. M. Haimovich, M. Govoni, T. Garner and O. Simeone, "Fast Data-Driven Adaptation of Radar Detection via Meta-Learning," 2021 55th Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, CA, USA, 2021, pp. 1618-1622, doi: 10.1109/IEEECONF53345.2021.9723379.

4. J. A. Dabin, A. M. Haimovich, J. Mauger and A. Dong, "Blind Source Separation with L1 Regularized Sparse Autoencoder," 2020 29th Wireless and Optical Communications Conference (WOCC), Newark, NJ, USA, 2020, pp. 1-5, doi: 10.1109/WOCC48579.2020.9114943.

5. Y. Li, Q. He, R. S. Blum and A. M. Haimovich, "Target Detection in Clutter Using Receiver with Reduced DOF in Frequency Domain," 2020 IEEE 11th Sensor Array and Multichannel Signal Processing Workshop (SAM), Hangzhou, China, 2020, pp. 1-5, doi: 10.1109/SAM48682.2020.9104318.

6. W. Jiang, A. M. Haimovich and O. Simeone, "End-to-end Learning of Waveform Generation and Detection for Radar Systems," 2019 53rd Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, CA, USA, 2019, pp. 1672-1676, doi: 10.1109/IEEECONF44664.2019.9049027.

7. W. Jiang and A. M. Haimovich, "Waveform Optimization in Cloud Radar with Spectral Congestion Constraints," 2019 IEEE Radar Conference (RadarConf), Boston, MA, USA, 2019, pp. 1-6, doi: 10.1109/RADAR.2019.8835506.

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IPR2024-01142

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Petitioners' Exhibit 1004, p. 21
AT&T et al v. ASUS Technology & Celerity
IPR2024-01142

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Petitioners' Exhibit 1004, p. 22
AT&T et al v. ASUS Technology & Celerity
IPR2024-01142

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Petitioners' Exhibit 1004, p. 24
AT&T et al v. ASUS Technology & Celerity
IPR2024-01142

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VII. Patents

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   METHOD AND DEVICE FOR WIRELESS TOPOLOGY DISCOVERY FOR TRAIN BACKBONE NETWORKS, US 10,257,719 B2, Apr. 9, 2019

2. Shengshan Cui, **Alexander Haimovich**
   ASSIGNING SOURCE NODES TO A SELECT GROUP IN A WIRELESS COMMUNICATION NETWORK
   US 8,885,514, Nov. 11, 2014

3. Bo Niu, **Alexander Haimovich**, Osvaldo Simeone, Oren Somekh
   SUM RATE OF BROADCAST CHANNELS WITH OUTDATED 1-BIT FEEDBACK
   US 8,112,095, Feb. 7, 2012

4. Hangjun Chen, **Alexander Haimovich**
   CLIPPING DISTORTION CANCELLER FOR OFDM SIGNALS
   US 7,983,144 B2, July 19, 2011

5. Hangjun Chen, **Alexander M. Haimovich**
   METHOD AND/OR SYSTEM FOR SPACE-TIME ENCODING AND/OR DECODING
   US 7,882,413, February 1, 2011

6. Shaomin Samuel Mo, Divaydeep Sikri, Alexander D. Gelman, **Alexander M. Haimovich**

Petitioners' Exhibit 1004, p. 25
AT&T et al v. ASUS Technology & Celerity
IPR2024-01142

METHODS AND APPARATUS FOR GENERATING AND PROCESSING WIDEBAND SIGNALS HAVING REDUCED DISCRETE POWER SPECTRAL DENSITY COMPONENTS
US 7,386,027 B2, Jun. 10, 2008

7. Nikolaus H. Lehmann, Alexander M. Haimovich
METHODS AND APPARATUS FOR TRANSMITTING AND RECEIVING RANDOMLY INVERTED WIDEBAND SIGNALS
US 7,317,748, January 8, 2008

8. Hangjun Chen, **Alexander Haimovich**
CLIPPING DISTORTION CANCELLER FOR OFDM SIGNALS
US 7,031,251 B2 Apr. 18, 2006

9. Joao Miguel Romano, Shaomin Samuel Mo, **Alexander M. Haimovich**
MODULATING A PULSE SIGNAL WITH A BIT STREAM
US 7,075,382 B2, Jul. 11, 2006

VIII. Service Activities

University

Director, New Jersey Center for Wireless Telecommunications (NJCWT) 2001-2004
NJCWT was during the period a state-funded consortium of the four main universities in NJ: NJIT, Princeton, Rutgers, and Stevens.

Department

Communications Area Coordinator 1996-2004
M.S. in Telecommunications Program Director 1998-2001
Member Endowed Chair Search Committee 2005-present
Member ECE Dept. Search Committee 2004-present

Editorships:

Associate Editor for IEEE Communications Letters 1997-2007.
Guest Editor: European Journal of Applied Signal Processing: Special Issue on Turbo Coding.

Professional Meetings Organizer and Chair:

Chair: Globecom 2003, Communications Theory Symposium
Technical Program Committee (recent): UWBST 2003, ICC 2004, Globecom 2004, Globecom 2005, UWBUST 2006.

Reviewer:

Numerous journals including: IEEE Transactions on Selected Area in Communications, IEEE Transactions on Vehicular Technology, IEEE Transactions on Communications

Petitioners' Exhibit 1004, p. 26
AT&T et al v. ASUS Technology & Celerity
IPR2024-01142

IEEE Transactions on Antenna and Propagation, IEEE Transactions on Aerospace and Electronic Systems, IEEE Communications Letters, IEEE Transactions on Signal Processing, IEEE Signal Processing Letters.

Petitioners' Exhibit 1004, p. 27
AT&T et al v. ASUS Technology & Celerity
IPR2024-01142