Abeer Alwan

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Department of Electrical and Computer Engineering UCLA, Los Angeles, CA 90095

Education:

MIT, EECS, Eng. (1987) Sc.D. (1992)

Northeastern University, BSEE with highest honors, (1983)

Awards, Honors, and Special Recognition

- Member, IEEE Signal Processing Fellows Committee, 2022-2023
- Chair, ISCA Distinguished Lectures Committee, 2019-2022
- Elected Member, IEEE Speech Processing Technical Committee, 2019-present
- Elected Member, IEEE Signal Processing Society Board of Governers, 2017-2020
- Distinguished Engineering Educator Award, Engineer's Council, 2017
- Program Committee, Machine Learning for Audio Signal Processing, NIPS, 2017
- Co-Chair, Interspeech Special Sessions Committee, 2016
- Elected Member, ISCA Advisory Council, 2015-present
- Distinguished Lecturer, APSIPA (Asian Pacific Signal Processing Association), 2012 - 2013
- Member and Vice Chair, IEEE Awards Board Review Committee, 2011-2015
- Fellow, International Speech Communication Association (ISCA), 2011
- Fellow, IEEE Signal Processing Society, 2008
- Fellow, Acoustical Society of America, 2003
- Fellow, Radcliffe Institute for Advanced Study (RIAS), Harvard University, 2006
- Distinguished Lecturer, ISCA, 2009-2011
- Keynote Speaker, Interspeech 2008, Brisbane, Australia
- Chair, IEEE James L. Flanagan Speech and Audio Signal Processing Award Committee, 2008-2010

- Area Director for Interspeech 2012, 2014
- Okawa Foundation Award in Telecommunications, 1997
- NSF Career Development Award, 1995-1998
- UCLA-TRW Excellence in Teaching Award, 1994
- NIH FIRST Career Development Award, 1994-1999
- NSF Research Initiation Award, 1993-1996
- Co-author of two best student paper awards at meetings of the Acoustical Society of America (ASA) and one at Interspeech

• Elected member: New York Academy of Sciences, Eta Kappa Nu, Outstanding Women of America, Sigma Xi, Tau Beta Pi, ASA Technical Committee on Speech Communication (1993-1999, and 2004-2007), and IEEE Signal Processing Technical Committees on Speech Processing (1996-2000, 2005-2009, 2011- 2013), and Audio and Electroacoustics (1996-1999).

Editorial Service:

- Associate Editor, Journal of the Acoustical Society of America, 2009-2015
- Associate Editor, IEEE Tran. Audio, Speech, and Language Processing, 2006- 2009
- Editor-in-Chief, Speech Communication, 2000-2003
- Member of the Editorial Boards of Speech Communication, since 2000, and Frontiers in Signal Processing since 2006

Academic Experience:

UCLA, Department of Electrical and Computer Engineering

1992-1996: Assistant Prof., 1996-2000: Associate Prof., 2000-present: Full Prof.; 2015-present: Vice Chair, Undergraduate Affairs

Research, and teaching in the areas of digital signal processing, speech processing (developed and taught courses at the undergraduate and graduate levels), and systems design.

Developed and teach two online graduate courses on speech processing to industry since 2009. The course is part of the MS online program.

UCLA, Biomedical Engineering (BME), Graduate Interdepart. Program (IDP)

1997-1999: Member of the Faculty Advisory Committee for the BME IDP, and Chair of the Bioacoustics, Speech and Hearing Area within the BME Program. 1999-2001: Vice Chair of the BME IDP.

Massachusetts Institute of Technology, Cambridge, MA Department of Electrical Engineering and Computer Science

1983-1992: Research Assistant, and Teaching Assistant for a graduate course and three undergraduate courses. 2006-2007: Visiting Scientist.

MIT's Simmons Hall Dormitory: 2006-2007, Visiting Resident House Master

Harvard's Leverett House: 2006-2007, Resident Affiliate

Industrial Experience

1993-present: Consultant for several companies on speech synthesis and recognition.

2015-2020: Member of the Advisory Board for Oben, Pasadena.

Selected Invited Talks and Participations

- Invited lectures in academic and industrial research labs including: AT&T, UT Austin, BU, Cal. Tech., Stanford U., Purdue U., U. Illinois Urbana-Champaign, UCSB, JHU, UCB, USC, Rockwell, ASA-LA and Boston Chapters, ACM-LA Chapter, Tufts, MIT Colloquia, UC Berkeley, Google, SRI, ICSI, Fed. U. of Rio de Janeiro and Uni. Camp. (Brazil), K.U. Leuven (Belgium), UK Speech (UK), UC Merced Mind and Society Colloquim, Harvard EECS Colloquium, National Symposium for the Advancement of Women in Science,

- Invited Keynote Speaker, Interspeech 2008, Brisbane, Australia

- Invited Speaker, UCLA's IPAM workshop on "Mathematics of the Ear", 2005

- Invited Speaker, AFOSR-sponsored workshop on "Speech Separation and Comprehension in Complex Acoustic Environments", Montreal, Canada, Nov. 2004

- Member, IEEE James L. Flanagan Speech and Audio Signal Processing Award Committee, 2003-2004, and 2007-2008; Chair: 2008-2010

- Appointed expert member to the appointments board concerning a Professorship in Signal Processing, Lund Institute of Technology, Sweden, 1997

- Invited panelist at a COSEPUP (Committee on Science, Engineering, and Public Policy, of the National Academy of Sciences, Engineering, and Institute of Medicine) meeting, Beckman Institute, Irvine, Feb. 1996. Based on the panelists' presentations, a report was written and published in 'Capitalizing on Investments in Science and Technology,' National Academy Press, Washington D.C., 1999

- Invited participant at several NSF panels and workshops (Directorates of Computer and Information Science and Engineering, and Education and Human Resources), and an NIH panel, 1995-present

Selected Journal Publications (last 12 years)

1. Ruchao Fan, Yunzheng Zhu, Jinhan Wang, and Abeer Alwan, "Towards Better Domain Adaptation for Self-supervised Models: A Case Study of Child ASR," IEEE Journal of Selected Topics in Signal Processing, 2022, DOI: 10.1109/JSTSP.2022.3200910

2. Matthew Marge, Carol Espy-Wilson, Nigel G. Ward, Abeer Alwan, Yoav Artzi, Mohit Bansal, Gil Blankenship, Joyce Chai, Hal Daumé, Debadeepta Dey, Mary Harper, Thomas Howard, Casey Kennington, Ivana Kruijff-Korbayová, Dinesh Manocha, Cynthia Matuszek, Ross Mead, Raymond Mooney, Roger K. Moore, Mari Ostendorf, Heather Pon-Barry, Alexander I. Rudnicky, Matthias Scheutz, Robert St. Amant, Tong Sun, Stefanie Tellex, David Traum, Zhou Yu, "Spoken language interaction with robots: Recommendations for future research," Computer Speech & Language (71), pp. 101255, 2022, doi: 10.1016/j.csl.2021.101255.

3. Amber Afshan, Jody Kreiman, and Abeer Alwan, "Speaker discrimination performance for "easy" versus "hard" voices in style-matched and -mismatched speech," The Journal of the Acoustical Society of America, 151(2):1393–1403, 2022.

4. Gary Yeung, Ruchao Fan, and Abeer Alwan, "Fundamental frequency feature warpingfor frequency normalization and data augmentation in child automatic speech recognition," Speech Communication (2021), doi: https://doi.org/10.1016/j.specom.2021.08.002

5. J Matthew Marge, Carol Espy-Wilson, Nigel G. Ward, Abeer Alwan, Yoav Artzi, Mohit Bansal, Gil Blankenship, Joyce Chai, Hal Daumé, Debadeepta Dey, Mary Harper, Thomas Howard, Casey Kennington, Ivana Kruijff-Korbayová, Dinesh Manocha, Cynthia Matuszek, Ross Mead, Raymond Mooney, Roger K. Moore, Mari Ostendorf, Heather Pon-Barry, Alexander I. Rudnicky, Matthias Scheutz, Robert St. Amant, Tong Sun, Stefanie Tellex, David Traum, Zhou Yu, "Spoken language interaction with robots: Recommendations for future research," Computer Speech & Language (71), pp. 101255, 2021, doi: 10.1016/j.csl.2021.101255.

6. Joanna J. Parga, Sharon Lewin, Juanita Lewis, Diana Montoya-Williams, Abeer Alwan, Brianna Shaul, Carol Han, Susan Y. Bookheimer, Sherry Eyer, Mirella Dapretto, Lonnie Zeltzer, Lauren Dunlap, Usha Nookala, Daniel Sun, Bianca H. Dang, Ariana E. Anderson, "Defining and Distinguishing Infant Behavioral States Using Acoustic Cry Analysis: Is Colic Painful?", Pediatric Research volume 87, pages 576–580, 2020

7. Jinxi Guo, Ning Xu, Kailun Qian, Yang Shi, Kaiyuan Xu, Yingnian Wu, and Abeer Alwan "Deep neural network based i-vector mapping for speaker verification using short utterances", Speech Communication, vol. 105, 92-102, 2018

8. Gary Yeung, Steven M. Lulich, Jinxi Guo, Mitchell S. Sommers, and Abeer Alwan "Subglottal resonances of American English speaking children", The Journal of the Acoustical Society of America 144 (6), 3437-3449, 2018.

9. Soo Jin Park, Gary Yeung, Neda Vesselinova, Jody Kreiman, Patricia Keating, and Abeer Alwan"Understanding Speaker Discrimination Abilities in Humans and Machines for Text-Independent Short Utterances of Different Speech Styles", The Journal of the Acoustical Society of America, 144(1), 375-386, 2018.

10. Jinxi Guo, Ruochen Yang, Harish Arsikere, and Abeer Alwan, "Robust speaker identification via fusion of subglottal resonances and cepstral features", Journal of the Acoustical Society of America (JASA), 141(4), EL420, April 2017

11. Kantapon Kaewtip, Abeer Alwan, Colm O'Reilly, and Charles E. Taylor, A robust automatic birdsong phrase classification: A template-based approach, JASA, 140(5), 3691-3701, 2017

12. Lee N. Tan, Abeer Alwan, George Kossan, Martin L. Cody, and Charles E. Taylor, "Dynamic time warping and sparse representation classification for birdsong phrase classification using limited training data", JASA, 137, 2015, pp. 1069-1080

13. J. Kreiman, M. Garellek, G. Chen, A. Alwan and B. R. Gerratt Perceptual evaluation of voice source models Journal of the Acoustical Society of America, Vol. 138 (1), July 2015 pp. 1 - 10

14. Gang Chen, Jody Kreiman, Abeer Alwan, ”The glottaltopogram: a method of analyzing high-speed images of the vocal folds”, Computer Speech and Language, 28 (5), 2014, pp. 1156-1169

15. Thomas Drugman, Paavo Alku, Abeer Alwan, Bayya Yegnanarayana, ”Glottal Source Processing: from Analysis to Applications”, Computer Speech and Language, Special Issue on Glottal Source Processing, Computer Speech and Language 28 (5), 2014, pp. 1117-1138

16. Harish Arsikere, Steven M. Lulich and Abeer Alwan, ”Estimating Speaker Height and Subglottal Resonances Using MFCCs and GMMs,” IEEE Signal Processing Letters, Vol 21, Issue 2, 2013, pp. 159–162

17. L. N. Tan, and Abeer Alwan, ”Multi-Band Summary Correlogram-based Pitch Detection for Noisy Speech”, Speech Communication, Volume 55, Issues 78, September 2013, pp. 841-856

18. Gang Chen, Jody Kreiman, Bruce Gerratt, Juergen Neubauer, Yen-Liang Shue, and Abeer Alwan, ”Development of a glottal area index that integrates glottal gap size and open quotient,” JASAVol. 133, Issue 3, 2013, pp. 1656-1666

19. Harish Arsikere, Gary K.F. Leung, Steven M. Lulich, and Abeer Alwan, ”Automatic estimation of the first three subglottal resonances from adults speech signals with application to speaker height estimation ,” Speech Communication, Vol. 55, pp. 51-70, 2013.

20. W. Chu and Abeer Alwan, “SAFE: A Statistical Approach to F0 Estimation under Clean and Noisy Conditions,” IEEE Trans. on Audio, Speech, and Language Processing (TASLP), Volume 20, No. 3, pp. 933 - 944, March 2012.

21. Steven M. Lulich, John R. Morton, Harish Arsikere, Mitchell Sommers, Gary Leung, and Abeer Alwan, “Subglottal resonances of adult male and female native speakers of American English,” JASA, Vol 132, pp. 2592-2602 (2012)

22. Jody Kreiman, Yen-Liang Shue, Gang Chen, Markus Iseli, Bruce R. Gerratt, Juergen Neubauer, and Abeer Alwan, “Relationships among voice quality, harmonic amplitudes, open quotient, and glottal area waveform shape in sustained phonation,” JASA, Volume 132, Issue 4, pp. 2625 -2632 (2012).

23. S. Lulich, A. Alwan, H. Arsikere, J. Morton, and, M. Sommers, “Resonances and wave propagation velocity in the subglottal airways”, JASA, Volume 130, Issue 4, pp. 2108-2115, 2011

24. B. J. Borgstrom and A. Alwan, “A Unified Framework for Designing Optimal STSA Estimators Assuming Additive Superposition of Speech and Noise”, IEEE TASLP, Vol. 19, p. 2579 – 2590, Nov. 2011.

25. H. Arsikere, S. Lulich, and A. Alwan, “Automatic Estimation of the First Subglottal Resonance,” JASA (Express Letters), Vol. 129, Issue 5, pp. 197-203, May 2011.

26. A. Alwan, J. Jiang and W. Chen, “Perception of place of articulation for plosives and fricatives in noise,” Speech Communication, 53, Issue 2, pp. 195-209, Feb. 2011.

27. S. Panchapagesan and A. Alwan, “A study of acoustic-to-articulatory inversion of speech by analysis-by-synthesis using chain matrices and the Maeda articulatory model,” JASA, Volume 129, Issue 4, pp. 2144-21 62, 2011.

28. J. Tepperman, S. Lee, S. Narayanan, and A. Alwan, “A Generative Student Model for Scoring Word Reading Skills,” IEEE Transactions On Audio, Speech, And Language Processing, Vol. 19, No. 2, February 2011

29. B. J. Borgstrom and A. Alwan, “A Statistical Approach to Mel-Domain Mask Estimation for Missing-Feature ASR”, IEEE Signal Processing Letters, Vol. 17, No. 11, pp. 941-944, 2010.

30. B. J. Borgstrom and A. Alwan, “HMM-Based Reconstruction of Unreliable Spectrographic Data for Noise Robust Speech Recognition”, IEEE Transactions on Audio, Speech, and Language Processing, Vol. 18, No. 5, July 2010.

31. B. J. Borgstrom and A. Alwan, “Improved Speech Presence Probabilities Using HMM-Based Inference, with Applications to Speech Enhancement and ASR,” Journal of Selected Topics in Signal Processing, Vol. 4, No. 5, pp. 808-815, 2010.

32. S. Wang, S. Lulich, and A. Alwan, “Automatic detection of the second subglottal resonance and its application to speaker normalization,” J. Acoust. Soc. Am, 2009. Volume 126, Issue 6, pp. 3268-3277.

Edited Books

1. Shrikanth Narayanan and Abeer Alwan (Ed.), “Text to Speech Synthesis: New Paradigms and Advances”, Prentice Hall, 2004.

2. Abeer Alwan, Antonio Ortega, C.-C. Jay Kuo, S. L. Max Nikias, Ping Wah Wong (Ed.), “1998 IEEE Second Workshop on Multimedia Signal Processing,” IEEE Press.

Book Chapters

1. V. Mitra, H. Franco, R. Stern, J. van Hout, L. Ferrer, M. Garciarena, W. Wang, D. Vergyri, A. Alwan, and J. Hansen, "Robust Features in Deep-Learning-Based Speech Recognition" a chapter in the book: New Era for Robust Speech Recognition: Exploiting Deep Learning, Edited by Watanabe, Delcroix, Metze, and Hershey. Springer, 2017

2. B. J. Borgstrom, A. Bernard, and A. Alwan, ” Error Recovery - Channel Coding and Packetization,” Chapter 8 in Automatic Speech Recognition on Mobile Devices and over Communication Networks, Springer-Verlag. Editors: Z.-H. Tan and B. Lindberg, pp. 163-185, 2008.

3. M. Hasegawa-Johnson and A. Alwan, “Speech Coding: Fundamentals and Applications,” Invited chapter, the Wiley Encyclopedia of Telecommunications, Editor: Prof. John Proakis, December 2002, Vol. 5, pp. 2340-2359.

3. Brian Strope and Abeer Alwan, “Modeling the Perception of Pitch-Rate Amplitude Modulation in Noise, in “Computational Models of Auditory Function”, S. Greenberg and M. Slaney ed., p. 315-327, IOS Press, NATO Science Series, Netherlands, 2001.

4. A. Alwan, P. Bangayan, B. Garrett, J. Kreiman, and C. Long, “Analysis by synthesis of pathological voices,” Voice Quality Measurement, R. Kent ed., p. 307-335, Singular Publishing Group, 1999.

5. A. Alwan, S. Narayanan, B. Strope, and A. Shen, “Speech production and perception models and their applications to synthesis, recognition, and cod ing,” in Speech Processing, Recognition, and Artificial Neural Networks, Chollet, DiBenedetto, Esposito, and Marinaro ed., p. 138-161, Springer-Verlag, UK, 1999.

6. Alwan, A., Chien, C., Cohen, E., Ho, Pottie, G., Jain, R., and Villasenor, J. “CAD of multimedia systems”, in Multimedia Technology for Applications, Sheu and Ismail ed., p. 190-213, IEEE Press, NY, 1998.

Selected Peer-Reviewed Conference Proceedings (last 10 years)

1) Vijay Ravi, Jinhan Wang, Jonathan Flint, Abeer Alwan, "A Step Towards Preserving Speakers' Identity While Detecting Depression Via Speaker Disentanglement," in Interspeech 2022, 3338-3342

2) Jinhan Wang, Vijay Ravi, Jonathan Flint, Abeer Alwan, "Unsupervised Instance Discriminative Learning for Depression Detection from Speech Signals," in Interspeech 2022, 2018-2022

3) Johnson, K. Everson, V. Ravi, A. Gladney, M. Ostendorf, and A. Alwan, "Automatic Dialect Density Estimation for African American English," in Interspeech 2022, 1283-1287, doi: 10.21437/Interspeech.2022-796

4) Amber Afshan, Abeer Alwan, "Learning from Human Perception to Improve Automatic Speaker Verification in Style-mismatched Conditions," in Interspeech 2022, 2338-2342, doi: 10.21437/Interspeech.2022-883

5) Amber Afshan, Abeer Alwan, "Attention-based Conditioning Methods using Variable Frame Rate for Stype-robust Speaker Verification," in Interspeech 2022, 2333-2337, doi: 10.21437/Interspeech.2022-882

6) Ruchao Fan, Abeer Alwan, "DRAFT: A Novel Framework to Reduce Domain Shifting in Self-supervised Learning and Its Application to Children's ASR," in Interspeech 2022, 4900-4904, doi: 10.21437/Interspeech.2022-11128

7) Jinhan Wang, Yunzheng Zhu, Ruchao Fan, Wei Chu, and Abeer Alwan, "Low Resource German ASR with Untranscribed Data Spoken by Non-native Children – INTERSPEECH 2021 Shared Task SPAPL System," Proc. of Interspeech 2021, pp. 1279-1283, doi: 10.21437/Interspeech.2021-1974.
8) Ruchao Fan, Wei Chu, Peng Chang, Jing Xiao, and Abeer Alwan, "An Improved Single Step Non-autoregressive Transformer for Automatic Speech Recognition," Proc. Interspeech 2021, pp. 3715-3719, doi: 10.21437/Interspeech.2021-1955.
9) Ruchao Fan, Amber Afshan, and Abeer Alwan, "BI-APC: Bidirectional autoregressive predictive coding for unsupervised pre-training and its application to children's ASR," ICASSP, 2021, pp. 7023-7027, DOI:10.1109/ICASSP39728.2021.9414970.
10) Gary Yeung, Ruchao Fan, and Abeer Alwan, "Fundamental frequency feature normalization and data augmentation for child speech recognition," ICASSP, 2021, pp. 6993-6997, DOI: 10.1109/ICASSP39728.2021.9413801.
11) Trang Tran, Morgan Tinkler, Gary Yeung, Abeer Alwan, and Mari Ostendorf, "Analysis of Disfluency in Children's Speech", Proc. Interspeech 2020, pp. 4278-4282, DOI: 10.21437/Interspeech.2020-3037.
12) Vijay Ravi, Ruchao Fan, Amber Afshan, Huanhua Lu, and Abeer Alwan, "Exploring the Use of an Unsupervised Autoregressive Model as a Shared Encoder for Text-Dependent Speaker Verification", Proc. Interspeech 2020, pp. 766-770, DOI: 10.21437/Interspeech.2020-2957.
13) Amber Afshan, Jody Kreiman, and Abeer Alwan, "Speaker discrimination in humans and machines: Effects of speaking style variability", Proc. Interspeech 2020, pp. 3136-3140, DOI: 10.21437/Interspeech.2020-3004.
14) Amber Afshan, Jinxi Guo, Soo Jin Park, Vijay Ravi, Alan McCree, and Abeer Alwan, "Variable frame rate-based data augmentation to handle speaking-style variability for automatic speaker verification", Proc. Interspeech 2020, pp. 4318-4322, DOI: 10.21437/Interspeech.2020-3006.
15) Gary Yeung, Alison L. Bailey, Amber Afshan, Morgan Tinkler, Marlen Q. Pérez, Alejandra Martin, Anahit A. Pogossian, Samuel Spaulding, Hae Won Park, Manushaqe Muco, Abeer Alwan and Cynthia Breazeal,"A robotic interface for the administration of language, literacy, and speech pathology assessments for children", SLATE, 2019, pp. 41-42.
16) Gary Yeung, and Abeer Alwan "A Frequency Normalization Technique for Kindergarten Speech Recognition Inspired by the Role of F0 in Vowel Perception", Interspeech, 2019, pp. 6-10.
17) Vijay Ravi, Soo Jin Park, Amber Afshan, and Abeer Alwan "Voice Quality and Between-Frame Entropy for Sleepiness Estimation", Interspeech, 2019, pp. 2408-2412.
18) Gary Yeung, Alison L. Bailey, Amber Afshan, Marlen Q. Pérez, Alejandra Martin, Samuel Spaulding, Hae Won Park, Abeer Alwan and Cynthia Breazeal "Towards the Development of Personalized Learning Companion Robots for Early Speech and Language Assessment", AERA, 2019
19) Soo Jin Park, Amber Afshan, Jody Kreiman, Gary Yeung and Abeer Alwan "Target and Non-target Speaker Discrimination by Humans and Machines", ICASSP, 2019, pp. 6326-6330
20) Gary Yeung and Abeer Alwan "On the Difficulties of Automatic Speech Recoginition for Kindergarten-Aged Children", in Proc. Interspeech 2018
21) Jinxi Guo, Ning Xu, Xin Chen, Yang Shi, Kaiyuan Xu, and Abeer Alwan "Filter Sampling and Combination CNN (FSC-CNN): a Compact CNN Model for Small-footprint ASR Acoustic Modeling Using Raw Waveforms", Proc. Interspeech 2018
22) Soo Jin Park, Amber Afshan, Zhi Ming Chua, and Abeer Alwan "Using Voice Quality Supervectors for Affect Identification", Proc. Interspeech 2018
23) Gary Yeung, Amber Afshan, Kaan Ege Ozgun, Kantapon Kaewtip, Steven M. Lulich, and Abeer Alwan,"Predicting Clinical Evaluations of Children's Speech with Limited Data Using Exemplar Word Template References" in Proc. SLATE 2017
24) Jinxi Guo, Ning Xu, Li-Jia Li and Abeer Alwan, "Attention based CLDNNs for short-duration acoustic scene classification" in Proc. Interspeech 2017

25) Jinxi Guo, Usha Nookala and Abeer Alwan, "CNN-based joint mapping of short and long utterance i-vectors for speaker verification using short utterances" (Interspeech 2017)
26) Soo Jin Park, Gary Yeung, Jody Kreiman, Patricia Keating, and Abeer Alwan, "Using Voice Quality Features to Improve Short-Utterance Text-Independent Speaker Verification," in Proc. Interspeech 2017
27) Park, Soo Jin, Caroline Sigouin, Jody Kreiman, Patricia Keating, Jinxi Guo, Gary Yeung, Fang-Yu Kuo, and Abeer Alwan Speaker Identity and Voice Quality: Modeling Human Responses and Automatic Speaker Recognition (Interspeech 2016). pp 1044–1048
28) Mitra, V., VanHout, J., Wang, W., Bartels, C., Franco, H., Vergyri, D., ... & Sangwan, A. Fusion Strategies for Robust Speech Recognition and Keyword Spotting for Channel-and Noise-Degraded Speech. (Interspeech 2016), pp 3683-3687.
29) Kaewtip, K., Taylor, C., & Alwan, A. (2016). Noise-Robust Hidden Markov Models for Limited Training Data for Within-Species Bird Phrase Classification. (Interspeech 2016), pp 2587-2591.
30) Guo, J., Yeung, G., Muralidharan, D., Arsikere, H., Afshan, A., & Alwan, A. Speaker Verification Using Short Utterances with DNN-Based Estimation of Subglottal Acoustic Features (Interspeech 2016), pp 2219-2222
31) Jinxi Guo, Rohit Paturi, Gary Yeung, Steven Lulich, Harish Arsikere, and Abeer Alwan, "Age-dependent height estimation and speaker normalization for children's resonances." Interspeech 2015. pp 1665-1669
32) Park, Soo Jin, Caroline Sigouin, Jody Kreiman, Patricia Keating, Jinxi Guo, Gary Yeung, Fang-Yu Kuo, and Abeer Alwan Speaker Identity and Voice Quality: Modeling Human Responses and Automatic Speaker Recognition (Interspeech 2016). pp 1044–1048
33) Mitra, VanHout, Want, Bartels, Franco, Vergyri, Alwan, "Fusion Strategies for Robust Speech Recognition and Keyword Spotting for Channel-and Noise-degraded Speech, Interspeech 2016, pp. 3683-3687.
34) Jody Kreiman, Soo Jin Park, Patricia Keating, and Abeer Alwan, "The Relationship Between Acoustic and Perceived Intraspeaker Variability in Voice Quality." Interspeech 2015, pp. 2357-2360
35) Kantapon Kaewtip, Lee Ngee Tan, Abeer Alwan, and Charles Taylor, "Bird- Phase Segmentation and Verification: a Noise Robust Template-Based Approach". ICASSP 2015, pp. 758 - 762
36) G Chen, SJ Park, J Kreiman, A Alwan, "Investigating the effect of F0 and vocal intensity on harmonic magnitudes: Data from high-speed laryngeal videoendoscopy", Interpseech 2014, 1668-1672.
37) Harish Arsikere, Hitesh Anand Gupta, Abeer Alwan, "Speaker recognition via fusion of subglottal features and MFCCs", Interspeech 2014, 1106-1110.
38) Lee Ngee Tan and Abeer Alwan, "Feature Enhancement Using Sparse Reference and Estimated Soft-Mask Exemplar Pairs for Noisy Speech Recognition", ICASSP 2014, pp. 171-1714.
39) Kantapon Kaewtip, Lee Ngee Tan, Abeer Alwan, "A Pitch-Based Spectral Enhancement Technique for Robust Speech Processing", Interspeech 2013.
40) Kantapon Kaewtip, Lee Ngee Tan, Abeer Alwan, Charles E.Taylor, "A robust automatic bird phrase classifier using dynamic time-warping with prominent region identification", ICASSP 2013, pp. 768-772.
41) Harish Arsikere, Steven M. Lulich and Abeer Alwan, "Non-linear frequency warping for VTLN using subglottal resonances and the third formant frequency," ICASSP 2013, pp. 7922-7926,
42) L. N. Tan, G. Kossan, M. L. Cody, C. E. Taylor, A. Alwan, "A Sparse Representation- based Classifier for In-set Bird Phrase Verification and Classification with Lim[L SEP]ited Training Data," ICASSP 2013, pp. 763-767.
43) Wei Chu and Abeer Alwan, "FBEM: A Filter Bank EM Algorithm for the Joint Optimization Of Features and Acoustic Model Parameters In Bird Call Classification", ICASSP 2012, pp. 1993-1996.
44) Gang Chen, Jody Kreiman, and Abeer Alwan, "The Glottaltopograph: A Method of Analyzing High-Speed Images of the Vocal Folds", ICASSP 2012, pp.3985-3988.
45) Harish Arsikere, Gary K.F. Leung, Steven M. Lulich and Abeer Alwan, "Automatic height estimation using the second subglottal resonance", ICASSP 2012, pp . 3989-3992.
46) Julien van Hout and Abeer Alwan, "A Novel Approach to Soft-Mask Estimation and Log-Spectral Enhancement For Robust Speech Recognition", ICASSP 2012, pp. 4105-4108.
47) Lee Ngee Tan and Abeer Alwan, "Noise-Robust F0 Estimation Using SNR- Weighted Summary Correlograms From Multi-Band Comb Filters," ICASSP 2011, pp. 4464-4467.
48) Harish Arsikere, Steven Lulich, and Abeer Alwan, "Automatic Estimation of the Second Subglottal Resonance from Natural Speech," ICASSP 2011, 4616 - 4619.
49) Bengt Borgstrom and Abeer Alwan, "Log-Spectral Amplitude Estimation With Generalized Gamma Distributions For Speech Enhancement," ICASSP 2011, pp. 4756-4759.

Grants and Contracts: More than 7 million dollars from NSF, NIH, DARPA, ARPA, and industry.