

Mark Hasegawa-Johnson

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Education

- **Post-Doctoral Fellow**, 1996-9, University of California at Los Angeles. Adviser: Abeer Alwan, Electrical Engineering. NRSA Title: Factor Analysis of MRI-Derived Articulator Shapes
- **Ph.D. Electrical Engineering and Computer Science**, August 1996, Massachusetts Institute of Technology. Adviser: Kenneth N. Stevens. Thesis: Formant and Burst Spectral Measurements with Quantitative Error Models for Speech Sound Classification
- **M.S. Electrical Engineering and Computer Science**, June 1989, Massachusetts Institute of Technology. Adviser: Jae S. Lim. Thesis: Echo Cancellation in the GSM Cellular Network

Appointments

- 2011-present: **Professor**, Electrical and Computer Engineering, **University of Illinois**, Urbana, IL, USA. **Full-Time Faculty**, Beckman Institute for Advanced Science and Technology. **Part-Time Faculty**, Coordinated Science Lab. **Affiliated Professor**, Graduate Program in Informatics. **Affiliated Professor**, Department of Speech and Hearing Science. **Affiliated Professor**, Department of Computer Science. **Affiliated Professor**, Department of Linguistics
- 2014-2018: **Research Faculty**, **Advanced Digital Sciences Center**, Singapore
- 2005-2011: **Associate Professor**, Electrical and Computer Engineering, University of Illinois
- 1999-2005: **Assistant Professor**, Electrical and Computer Engineering, University of Illinois
- 1996-1999: **Post-Doctoral Fellow**, **University of California at Los Angeles**, USA
- 1991-1996: **Graduate Research Assistant**, **Massachusetts Institute of Technology**, Cambridge, MA, USA
- 1989-1990: **Engineer**, **Fujitsu Laboratories Limited**, Kawasaki, Japan
- 1988-1989: **Engineering Intern**, **Motorola Corporate Research**, Schaumburg, IL, USA

Editorships and Offices Held in Professional Societies

1. **Senior Area Editor**, IEEE Trans. Audio, Speech and Language (2017-present)
2. **Treasurer**, **ISCA** (International Speech Communication Association, 2013-present)
3. **Liaison**, Special Interest Group on Machine Learning (SIGML) of the International Speech Communication Association (ISCA) (2010-2020)
4. **Secretary**, Speech Prosody Special Interest Group (SProSIG) of the International Speech Communication Association (ISCA) (2010-2018)
5. **Member**, **Speech and Language Technical Committee (SLTC)**, IEEE Signal Processing Society (2011-2017)

6. **Associate Editor**, J. Acoust. Soc. Am. (2009-2017), Laboratory Phonology (2009-2015), IEEE Trans. Audio, Speech, and Language (2006-2009), IEEE Signal Processing Letters (2002-2004).
7. **Executive Secretary**, Phi Beta Kappa (Liberal Arts and Sciences Honor Society), Gamma of Illinois Chapter, University of Illinois, 2006-2017, 2019-present
8. **Articulograph International Steering Committee**, member, 2007-2011 (wiki.ag500.net)
9. **Chapter Adviser**, Eta Kappa Nu (Electrical and Computer Engineering Honor Society), Alpha Chapter, University of Illinois at Urbana-Champaign, 2004-2007
10. **Scholarship Chair**, Phi Beta Kappa (Liberal Arts and Sciences Honor Society), Gamma of Illinois Chapter, University of Illinois, 2004-2006

Society Memberships

1. **Fellow** of the IEEE, for contributions to speech processing of under-resourced languages, 2020
2. **Fellow** of the Acoustical Society of America, for contributions to vocal tract and speech modeling, 2011
3. **Senior Member**, Association for Computing Machinery, 2009
4. **Member**, International Speech Communication Association

Awards and Special Recognition

1. **Best Paper Award**, IEEE Transactions on Audio Speech and Language 2020, for Po-Sen Huang, Minje Kim, Mark Hasegawa-Johnson, and Paris Smaragdis, “Joint Optimization of Masks and Deep Recurrent Neural Networks for Monaural Source Separation,” <https://ieeexplore.ieee.org/document/7194774>.
2. **William L. Everitt Faculty Scholar Award**, ECE Department, University of Illinois, 2020-2021
3. University of Illinois **List of Teachers Rated “Excellent”** by their Students, eight times including spring and fall 2020.
4. **Best Student Paper**, for the Paper “Adapting ASR for Under-Resourced Languages Using Mismatched Transcriptions,” Chunxi Liu, Preethi Jyothi, Hao Tang, Vimal Manohar, Rose Sloan, Tyler Kekona, Mark Hasegawa-Johnson, Sanjeev Khudanpur, IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), Shanghai, China, March 2016
5. Starkey Grant for **Best Student Paper** in the AASP Area, for the Paper “Deep Learning for Monaural Speech Separation,” Po-Sen Huang, Minje Kim, Mark Hasegawa-Johnson, and Paris Smaragdis, IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Florence, Italy, May 4-9, 2014.
6. **Dean’s Award for Excellence in Research**, University of Illinois College of Engineering, 2012
7. **Best Student Paper** for the paper “A Novel Gaussianized Vector Representation for Natural Scene Categorization,” Xi Zhou, Xiaodan Zhuang, Hao Tang, Mark Hasegawa-Johnson, and Thomas Huang, *International Conference on Pattern Recognition (ICPR)*, Tampa, USA, Dec. 2008
8. **Third Place**, Star Challenge Multimedia Information Retrieval Competition, A*STAR 2008
9. **First Place**, Acoustic Event Recognition competition, 2007 CLEAR (Classification of Events, Activities and Relationships) Evaluation and Workshop (Stiefelhofen et al., “The CLEAR 2007 Evaluation,” LNCS 4625:3-34, 2008)
10. **Outstanding Advisers List**, University of Illinois College of Engineering, April 2006
11. **Best Reviewer**, Neural Information Processing Systems (NIPS), 2005
12. **Honorary Initiate**, Alpha Chapter of Eta Kappa Nu (Electrical and Computer Engineering Honor Society), 2003
13. **Frederick V. Hunt Post-Doctoral Research Fellow**, Acoustical Society of America, 1996
14. **Paul L. Fortescue Graduate Fellow**, IEEE, 1989
15. Eta Kappa Nu, Tau Beta Pi, Sigma Xi, Phi Beta Kappa

Keynotes and Invited Talks

1. “Grapheme-to-Phoneme Transduction for Cross-Language ASR,” Workshop on Statistical Language and Speech Processing, 2021.
2. “Multimodal Distant Supervision,” NIPS workshop on Self-Supervised Learning for Speech and Audio Processing, 2020
3. “Distant Supervision for Cross-Language Speech Adaptation.” Keynote speech, ASRU 2019 (IEEE Workshop on Automatic Speech Recognition and Understanding)
4. “Multimedia AI and User Trust,” Invited talk, AI Association of Korea Workshop on Artificial Intelligence and Blockchain, Seoul, 11/2019
5. “Unwritten Languages as a Test Case for the Theory of Phonetic Universals.” Keynote speech, ISCSLP 2018 (International Symposium on Chinese Spoken Language Processing),
6. “Prosody in Speech Technology.” Series of four plenary lectures, ISCA Winter School on Speech and Audio Processing, 2016.

Conference, Workshop, and Panel Organization Activities

1. **Team Member**, Jelinek Speech and Language Technology (JSALT) Workshop WS17, “The Speaking Rosetta Stone - Discovering Grounded Linguistic Units for Languages without Orthography,” Pittsburgh, PA, June–August, 2017
2. **Team Leader**, Jelinek Speech and Language Technology (JSALT) Workshop WS15, “Probabilistic Transcription Using EEG and Crowdsourcing for Languages with No Native Language Transcribers,” Seattle, WA, June–August, 2015
3. **Panel Organizer**, VAC Consortium Working Group on Multimedia Analytics (Adelphi, MD; May 2011)
4. **Workshop Co-Chair**, SPREI Speech Production Workshop (Urbana, IL; May 2011)
5. **Workshop Co-Chair**, Illinois Speech Day (Chicago, IL; May 2009, May 2010, May 2011)
6. **Conference General Chair**, Fifth International Conference on Speech Prosody (2010)
7. **Beckman Institute Program Advisory Committee**, 2008-present
8. **Workshops Co-Chair**, HLT/NAACL 2009
9. **Team Member**, DARPA/NSF CLSP Summer Research Workshop, Articulatory-Feature Based Speech Recognition, Baltimore, MD, June–August, 2006
10. **Team Leader**, DARPA/NSF CLSP Summer Research Workshop, Landmark-Based Speech Recognition, Baltimore, MD, June–August, 2004
11. **Technical Committee or Conference Reviewer**: AAAI; ACL; AISTATS; UIUC Allerton; AP-SIPA; IEEE ASRU; CBMI; EMNLP; ACL HLT; IEEE ICASSP; IEEE ICC; ICML; ICPR; ICPPIT; ICPRAM; ISCA Interspeech; LabPhon; MCLC; NAACL; NeurIPS (Voted ‘Best Reviewer: 2005, 2020); ISCA/ACL SLPAT; ISCA SLaTE; ISCA SPASR; UIUC SPREI; IEEE SLT
12. **Journal Reviewer**: ACM Trans. Asian Language Processing; Acoustics Research Letters Online (ARLO); Acustica/Acta Acustica; Clinical Linguistics and Phonetics; Computer Speech and Language; EURASIP Journal on Audio; IEEE Proceedings on Vision, Image, and Signal Processing; IEEE Signal Processing Letters; IEEE Transactions on Acoustics, Speech, and Signal Processing; IEEE Transactions on Aerospace and Electronic Systems; IEEE Transactions on Audio, Speech, and Language; IEEE Transactions on Signal Processing; IEEE Transactions on Speech and Audio Processing; Journal of the Acoustical Society of America; Journal of Phonetics; Journal of Speech, Language, and Hearing Research; Journal of Speech Sciences; Journal of Zhejiang University of Science and Technology; Machine Learning Journal; Pattern Recognition; Pattern Recognition Letters; Proceedings of the IEEE; Sadha; Speech Communication

13. **Proposal Reviewer:** National Science Foundation (NSF). 14 research funding panels, one graduate fellowship panel, 8 technical mail reviews; Netherlands Organization for Scientific Research (NWO), 4 technical mail reviews; National Science and Engineering Research Council of Canada (NSERC), two mail reviews; Qatar National Research Fund (QNRF), 4 mail reviews, Springer Academic Publishing, two textbook proposal reviews
14. **Course Director,** Multimedia Signal Processing (ECE 417), 2013-present; Signal and Image Analysis (ECE 401), 2013-present; Audio Engineering (ECE 403), 2001-2012

Students and Collaborators

- **PhD Students (Graduated):** Mohamed Kamal Omar (12/2003; IBM), Ken Chen (5/2004; University of Texas MD Anderson, Bioinformatics and Computational Biology), Yanli Zheng (12/2004; FICO), Bowon Lee (12/2006; Inha University), Bryce Lobdell (5/2009; openbi.com), Lae-Hoon Kim (8/2010; Qualcomm), Arthur Kantor (10/2010; IBM), Boon Pang Lim (12/2010; Novumind), Xiaodan Zhuang (5/2011; Apple), Andreas Ehmann (12/2011; Pandora), Jui-Ting Huang (1/2012; Facebook); Harsh Vardhan Sharma (2/2012; Credit Karma); Sujeeth Bharadwaj (5/2015; Microsoft); Po-Sen Huang (5/2015; Microsoft); Roger Serwy (5/2017; Enthought); Yang Zhang (5/2017; MIT IBM Watson AI Laboratory); Mary Pietrowicz (12/2017; IBM); Amit Das (8/2018; Microsoft Research); Xuesong Yang (8/2018; Kwai AI); Wenda Chen (2019; Intel Labs); Kaizhi Qian (12/2020; MIT IBM Watson AI Laboratory)
- **Post-Doctoral Fellows:** Jeung-Yoon Choi (2002-4; Yonsei University); Heejin Kim (2006-10; University of Illinois); Kyung-Tae Kim (2008-10; Samsung); Arthur Kantor (2010-11; IBM); Suma Bhat (2011-4; UIUC); Preethi Jyothi (2013-6; IIT Bombay)
- **Visiting Professors and Visiting Scholars:** Sung-Suk Kim (Yong-In University; 2002-2003), Sung-Tae Jung (Wong-Kwang University; 2004-2005), Yanxiang Chen (University of Science and Technology of China; 2005-6), Zhijian Ou (Tsinghua University; 2014-5), Yanlu Xie (Beijing Language and Culture University; 2015-6)
- **Post-Graduate and Post-Doctoral Advisors:** Jae S. Lim (MIT), Kenneth N. Stevens (MIT), Abeer Alwan (UCLA)
- **Non-UIUC Collaborators on Publications, Preceding 48 Months:** Kartik Audhkhasi (IBM, 2018), Laurent Besacier (ICP Grenoble, 2018), Alan Black (Carnegie-Mellon, 2018), Van Hai Do (Advanced Digital Sciences Center, 2018), Emmanuel Dupoux (Ecole des Hautes Etudes en Sciences Sociales, Paris, 2018), Shiyu Chang (MIT Watson AI Laboratory, 2021), Nancy F.Y. Chen (A*STAR, 2018), Francesco Ciannella (Cisco Systems, 2018), David Cox (MIT IBM Watson AI Laboratory, 2020), Najim Dehak (Johns Hopkins, 2020), Van Hai Do (Advanced Digital Sciences Center, 2018), Patrick Ebel (Radboud University, 2018), Mohamed Elmahdy (German University of Cairo, 2018), Dinei Florencio (Microsoft, 2018), Pierre Godard (ICP Grenoble, 2018), Katrin Kirchhoff (Amazon Web Services, 2020), Gina Levow (University of Washington, 2020), Haizhou Li (National University of Singapore, 2018), Boon Pang Lim (Novumind, 2018), Florian Metze (Carnegie-Mellon, 2018), Markus Mueller (Karlsruhe Institute of Technology, 2018), Graham Neubig (Carnegie Mellon, 2018), Lucas Ondel (Brno University of Technology, 2018), Bhuvana Ramabhadran (Google, 2018), Andrew Rosenberg (IBM, 2018), Odette Scharenborg (Radboud University, 2020), Sebastian Stuecker (Karlsruhe Institute of Technology, 2018), Samuel Thomas (IBM, 2020), Sebastian Tiesmeyer (Radboud University, 2018), Shinji Watanabe (Johns Hopkins University, 2020), Yang Zhang (MIT IBM Watson AI Laboratory, 2021)
- **Non-UIUC Collaborators on Grants, Preceding 48 Months:** David Beiser (University of Chicago, 2021), David Chestek (University of Illinois at Chicago, 2021), Najim Dehak (Johns Hopkins, 2021), Katrin Kirchhoff (Amazon, 2018), Gina Levow (U. Washington, 2019), Michael Picheny (IBM, 2018), Odette Scharenborg (Radboud University, 2021), Chang Dong Yoo (Korea Advanced Institute of Science and Technology, 2021)

Grants Received

1. Factor Analysis of MRI-Derived Articulator Shapes. NIH Individual National Research Service Award, 1999.
2. PI: Factor Analysis of the Tongue Shapes of Speech. University of Illinois Research Board, 1999-2000.
3. PI: Immersive Headphone-free Virtual Reality Audio. University of Illinois Research Board, 2001-2002.
4. PI: Prosody-Dependent Speech Recognition. University of Illinois Critical Research Initiative, 2002-2004.
5. PI: CAREER: Landmark-Based Speech Recognition in Music and Speech Backgrounds. NSF IIS 01-32900, 2002-2007.
6. PI: Acoustic Features for Phoneme Recognition. Phonetact Incorporated, 2002.
7. PI: Audiovisual Speech Recognition: Data Collection and Feature Extraction in Automotive Environment. Motorola Communications Center RPS 19, 2002-2005.
8. Co-PI: Development and Validation of An E-diary System for Assessing Physical Activity and Travel Behaviors. Robert Wood Johnson Foundation, 2003-2004.
9. PI: Prosodic, Intonational, and Voice Quality Correlates of Disfluency. NSF IIS 04-14117, 2004-2007.
10. Co-PI: Automated Methods for Second-Language Fluency Assessment. University of Illinois Critical Research Initiative, 2005-2007.
11. PI: Audiovisual Distinctive-Feature-Based Recognition of Dysarthric Speech. NSF IIS 05-34106, 2006-2010.
12. PI: Description and Recognition of Audible and Visible Dysarthric Phonology, NIH, PHS 1 R21 DC008090A, 2006-2009.
13. PI: Rhythmic Organization of Durations for Automatic Speech Recognition. UIUC Research Board, 2005-6.
14. Co-PI: Cell Phone Annoyance Factors. QUALCOMM, Inc., 2005-7.
15. Co-PI: Audiovisual Emotional Speech AVATAR. Motorola Communications Center RPS 31, 2005-7.
16. Co-PI: DHB: Fluency and the Dynamics of Second Language Acquisition. NSF IIS 06-23805, 2006-10.
17. Co-PI: RI-Collaborative Research: Landmark-based robust speech recognition using prosody-guided models of speech variability. NSF IIS 07-03624, 2007-12.
18. PI: RI Medium: Audio Diarization - Towards Comprehensive Description of Audio Events. NSF IIS 08-03219, 2008-10.
19. PI: FODAVA-Partner: Visualizing Audio for Anomaly Detection. NSF CCF 08-07329, 2008-13.
20. Co-PI: Opportunistic Sensing for Object and Activity Recognition from Multi-Modal, Multi-Platform Data. ARO W911NF-09-1-0383, 2009-14.
21. PI: Multi-dialect phrase-based speech recognition and machine translation for Qatari broadcast TV. Qatar National Research Fund NPRP 09-410-1-069, 2010-3.
22. Co-PI: CDI-Type II: Collaborative Research: Groupscope: Instrumenting Research on Interaction Networks in Complex Social Contexts, NSF 0941268, 2010-4.
23. Co-PI: Speech Production Research Initiative, University of Illinois Graduate College Focal Point Program, 2010-11
24. Faculty Mentor: FY 2011 Summer Undergraduate Research Fellowship SURF NIST Gaithersburg, NIST COM 70NANB11H087, 2011
25. PI: Pseudo-intelligent mediators (“Robo-Buddies”) to improve communication between students with and students without physical disabilities, Illinois Innovation Initiative (In3), 2012-4
26. Co-PI: Conversation Strategies for Students With and Students Without Physical Disabilities, University of Illinois Graduate College Focal Point Program, 2012-3
27. Co-PI: AHRQ R21-Hs022948, Collaborative Patient Portals:Computer-based Agents and Patients ’ Understanding of Numeric Health Information, 2014-6
28. LPI: QNRF NPRP 7-766-1-140, The Family as the Unit of Intervention for Speech-Generating Augmentative/Assistive Communication, 2014-8

29. PI: Illinois Learning Sciences Design Initiative (ILSDI), University of Illinois. “Capturing. Transcribing. Searching. Analyzing. Adaptive: Learning in a curated classroom.” 2015-6
30. Co-PI: Institute for Infocomm Research (I²R), Agency for Science, Technology, Advancement and Research (ASTAR), Singapore. “Mismatched Crowdsourcing for 80-Language Speech Recognition.” 2015-7
31. PI: Advanced Digital Sciences Center (ADSC), Singapore. “Noisy Channel Models for Massively Multilingual Automatic Speech Recognition.” 2015-7
32. PI: NSF. “EAGER: Matching Non-Native Transcribers to the Distinctive Features of the Language Transcribed.” 2015-8
33. Co-PI: DARPA LORELEI. “LanguageNet: Transfer Learning Across a Language Similarity Networks.” 2015-9
34. Co-PI: NSF IIS 19-10319. “RI: Small: Collaborative Research: Automatic Creation of New Phone inventories.” 2019-22
35. Co-I: NIH 1 R34 DA050256. “HEAL Consortium: Establishing Innovative Approaches for the HEALTHy Brain and Child Development Study.” 2019-20
36. Co-I: ICT, Korea. “Deep F-measure Maximization for Fairness in Speech Understanding.” 2020-2021
37. Co-PI: C3.ai Digital Transformation Institute. “Adding Audio-Visual Cues to Signs and Symptoms for Triaging Suspected or Diagnosed COVID-19 Patients.” 2020-2021

Journal Articles

1. Mark Hasegawa-Johnson and T. Taniguchi, “On-line and off-line computational reduction techniques using backward filtering in CELP speech coders,” *IEEE Transactions Acoustics, Speech, and Signal Processing*, vol. 40, pp. 2090-2093, 1992
2. Mark Hasegawa-Johnson, “Electromagnetic Exposure Safety of the Carstens Articulograph AG100,” *Journal of the Acoustical Society of America*, vol. 104, pp. 2529-2532, 1998.
3. Mark Hasegawa-Johnson, “Line Spectral Frequencies are the Poles and Zeros of a Discrete Matched-Impedance Vocal Tract Model,” *Journal of the Acoustical Society of America*, vol. 108, no. 1, pp. 457-460, 2000.
4. Mark Hasegawa-Johnson, “Finding the Best Acoustic Measurements for Landmark-Based Speech Recognition” [in Japanese], *Accume Magazine* 11:45-7, Kyoto Computer Gakuin, Kyoto, Japan, 2002 (NSF 0132900)
5. Yanli Zheng, Mark Hasegawa-Johnson, and Shamala Pizza, “PARAFAC Analysis of the Three dimensional tongue Shape,” *Journal of the Acoustical Society of America*, vol. 113, no. 1, pp. 478-486, January 2003 (NSF 0132900).
6. Mark Hasegawa-Johnson, Shamala Pizza, Abeer Alwan, Jul Cha, and Katherine Haker, “Vowel Category Dependence of the Relationship Between Palate Height, Tongue Height, and Oral Area,” *Journal of Speech, Language, and Hearing Research*, vol. 46, no. 3, pp. 738-753, 2003 (NSF 0132900).
7. M. Kamal Omar and Mark Hasegawa-Johnson, “Approximately Independent Factors of Speech Using Nonlinear Symplectic Transformation,” *IEEE Transactions on Speech and Audio Processing*, vol. 11, no. 6, pp. 660-671, 2003 (NSF 0132900).
8. Sung-Suk Kim, Mark Hasegawa-Johnson, and Ken Chen, “Automatic Recognition of Pitch Movements Using Multilayer Perceptron and Time-Delay Recursive Neural Network,” *IEEE Signal Processing Letters* 11(7):645-648, 2004 (NSF 0414117).
9. M. Kamal Omar and Mark Hasegawa-Johnson, “Model Enforcement: A Unified Feature Transformation Framework for Classification and Recognition,” *IEEE Transactions on Signal Processing*, vol. 52, no. 10, pp. 2701-2710, 2004 (NSF 0132900).
10. Mark Hasegawa-Johnson, Ken Chen, Jennifer Cole, Sarah Borys, Sung-Suk Kim, Aaron Cohen, Tong Zhang, Jeung-Yoon Choi, Heejin Kim, Taejin Yoon, and Sandra Chavarria, “Simultaneous Recognition of Words and Prosody in the Boston University Radio Speech Corpus,” *Speech Communication* 46(3-4):418-439, 2005 (NSF 0414117).

11. Jeung-Yoon Choi, Mark Hasegawa-Johnson, and Jennifer Cole, "Finding Intonational Boundaries Using Acoustic Cues Related to the Voice Source," *Journal of the Acoustical Society of America* 118(4):2579-88, 2005 (NSF 0414117).
12. Ken Chen, Mark Hasegawa-Johnson, Aaron Cohen, Sarah Borys, Sung-Suk Kim, Jennifer Cole and Jeung-Yoon Choi, "Prosody Dependent Speech Recognition on Radio News Corpus of American English," *IEEE Transactions on Speech and Audio Processing*, 14(1):232-245, 2006 (NSF 0414117).
13. Tong Zhang, Mark Hasegawa-Johnson and Stephen E. Levinson, "Cognitive State Classification in a spoken tutorial dialogue system," *Speech Communication* 48(6):616-632, 2006.
14. Tong Zhang, Mark Hasegawa-Johnson and Stephen E. Levinson, "Extraction of Pragmatic and Semantic Saliency from Spontaneous Spoken English," *Speech Communication* 48(3-4):437-462, 2006.
15. Xi Zhou, Xiaodan Zhuang, Ming Liu, Hao Tang, Mark Hasegawa-Johnson and Thomas Huang, "HMM-Based Acoustic Event Detection with AdaBoost Feature Selection," *Lecture Notes in Computer Science*, Volume 4625:345-353, 2008 (NSF 0807329)
16. Jennifer Cole, Heejin Kim, Hansook Choi, and Mark Hasegawa-Johnson, "Prosodic effects on acoustic cues to stop voicing and place of articulation: Evidence from Radio News speech." *Journal of Phonetics* 35:180-209, 2007 (NSF 0414117).
17. Soo Eun Chang, Noline Ambrose, Christy Ludlow, and Mark Hasegawa-Johnson, "Brain Anatomy Differences in Childhood Stuttering," *Neuroimage* 39(3):1333-1344 (ISSN:1053-8119), 2008
18. Lae-Hoon Kim, Mark Hasegawa-Johnson, Jun-Seok Lim, and Keong Sung, "Acoustic Model for Robustness Analysis of optimal multi-point room equalization," *J. Acoust. Soc. Am.* 123(4):2043-2053, 2008 (NSF 0534106).
19. Hao Tang, Yun Fu, Jilin Tu, Mark Hasegawa-Johnson, and Thomas S. Huang, "Humanoid Audio-Visual Avatar with Emotive Text-to-Speech Synthesis," *IEEE Trans. Multimedia* 10(6):969-981, 2008.
20. Su-Youn Yoon, Lisa Pierce, Amanda Huensch, Eric Juul, Samantha Perkins, Richard Sproat, and Mark Hasegawa-Johnson, "Construction of a rated speech corpus of L2 learners' speech," *CALICO Journal* 26(3):662-673, May 2009
21. Thomas S. Huang, Mark A. Hasegawa-Johnson, Stephen M. Chu, Zhihong Zeng, and Hao Tang, "Sensitive Talking Heads," *IEEE Signal Processing Magazine* 2(4):67-72, July 2009 (NSF 0807329)
22. Hao Tang, Mark Hasegawa-Johnson, and Thomas S. Huang, "A novel vector representation of stochastic signals based on adapted ergodic HMMs," *IEEE Signal Processing Letters*, 17(8):715-718, 2010 (NSF 0534106)
23. Xiaodan Zhuang, Xi Zhou, Mark A. Hasegawa-Johnson, and Thomas S. Huang, "Real-world Acoustic Event Detection," *Pattern Recognition Letters*, 31(2):1543-1551, 2010 (NSF 0807329)
24. Xi Zhou, Xiaodan Zhuang, Hao Tang, Mark A. Hasegawa-Johnson, and Thomas S. Huang, "Novel Gaussianized Vector Representation for Improved Natural Scene Categorization," *Pattern Recognition Letters*, 31(8):702-708, 2010 (NSF 0807329)
25. Jennifer Cole, Yoonsook Mo, and Mark Hasegawa-Johnson, "Signal-based and expectation-based factors in the perception of prosodic prominence," *Laboratory Phonology* 1(2):425-452, 2010 (NSF 0703624)
26. Heejin Kim, Katie Martin, Mark Hasegawa-Johnson, and Adrienne Perlman, "Frequency of consonant articulation errors in dysarthric speech," *Clinical Linguistics & Phonetics*, 24(10):759-770, 2010 (NSF 0534106)
27. Bryce E Lobdell, Jont B Allen, and Mark A Hasegawa-Johnson, "Intelligibility predictors and neural representation of speech," *Speech Communication*, 53:185-194, 2011 (NSF 0807329)
28. İ. Yücel Özbek, Mark Hasegawa-Johnson and Mübcecel Demirekler, "Estimation of Articulatory Trajectories Based on Gaussian Mixture Model (GMM) with Audio-Visual Information Fusion and Dynamic Kalman Smoothing," *IEEE Transactions on Audio, Speech and Language*, 19(5):1180-1195, 2011
29. Heejin Kim, Mark Hasegawa-Johnson, and Adrienne Perlman, "Vowel Contrast and Speech Intelligibility in Dysarthria," *Folia Phoniatrica et Logopaedica*, 63(4):187-194, 2011 (NIH R21 DC008090A)

30. İ. Yücel Özbek, Mark Hasegawa-Johnson and Mübeccel Demirekler, “On Improving Dynamic State Space Approaches to Articulatory Inversion with MAP based Parameter Estimation,” *IEEE Transactions on Audio, Speech, and Language*, **20**(1):67–81, 2012
31. Hao Tang, Stephen Chu, Mark Hasegawa-Johnson, and Thomas Huang, “Partially Supervised Speaker Clustering,” *IEEE Transactions on Pattern Analysis and Machine Intelligence* **34**(5):959-971, May 2012 (NSF 0807329)
32. Shobhit Mathur, Marshall Scott Poole, Feniosky Peña-Mora, Mark Hasegawa-Johnson and Noshir Contractor, “Detecting interaction links in a collaborating group using manually annotated data,” *Social Networks*, doi:10.1016/j.socnet.2012.04.002, 2012 (NSF 0941268)
33. Panying Rong, Torrey Loucks, Heejin Kim, and Mark Hasegawa-Johnson, “Relationship between kinematics, F2 slope and speech intelligibility in dysarthria due to cerebral palsy,” in *Clinical Linguistics and Phonetics*, September 2012, Vol. 26, No. 9 , Pages 806-822 (doi:10.3109/02699206.2012.706686)
34. Harsh Vardhan Sharma and Mark Hasegawa-Johnson, “Acoustic Model Adaptation using In-domain Background Models for Dysarthric Speech Recognition,” *Computer Speech and Language*, Volume 27, Issue 6, September 2013, Pages 1147-1162, doi:10.1016/j.csl.2012.10.002 (NSF 0534106)
35. Hosung Nam, Vikramjit Mitra, Mark Tiede, Mark Hasegawa-Johnson, Carol Espy-Wilson, Elliot Saltzman, and Louis Goldstein, “A procedure for estimating gestural scores from speech acoustics,” *J. Acoust. Soc. Am.* **132**(6):3980-3989, 2012 (NSF 0703624)
36. Mohamed Elmahdy, Mark Hasegawa-Johnson and Eiman Mustafawi, “Hybrid Phonemic and Graphemic Modeling for Arabic Speech Recognition,” *International Journal of Computational Linguistics* **3**(1), pp. 88-96, 2012 (ISSN 2180-1266; QNRF NPRP 09-410-1-069)
37. Robert Mertens, Po-Sen Huang, Luke Gottlieb, Gerald Friedland, Ajay Divakaran, Mark Hasegawa-Johnson, “On the Application of Speaker Diarization to Audio Indexing of Non-Speech and Mixed Non-Speech/Speech Video Soundtracks,” *International Journal of Multimedia Data Engineering and Management (IJDEM)*, July 2012, Volume 3, Issue 3, pp. 1–19, DOI: 10.4018/jmdem.2012070101
38. Kyungtae Kim, Kai-Hsiang Lin, Dirk B Walther, Mark A Hasegawa-Johnson, and Thomas S Huang, “Automatic Detection of Auditory Saliency with Optimized Linear Filters Derived from Human Annotation,” *Pattern Recognition Letters* **38**(1):78-85, 2013, doi:10.1016/j.patrec/2013.11.010 (NSF 0803219)
39. Kai-Hsiang Lin, Xiaodan Zhuang, Camille Goudeseune, Sarah King, Mark A Hasegawa-Johnson and Thomas S Huang, “Saliency-maximized Audio Visualization and Efficient Audio-visual Browsing for Faster-than-real-time Human Acoustic Event Detection,” *ACM Transactions on Applied Perception* **10**(4):26:1-12, 2013 (ISSN 1544-3558; NSF 0803219)
40. Austin Chen and Mark Hasegawa-Johnson, “Mixed Stereo Audio Classification Using a Stereo-Input Mixed-to-Panned Level Feature,” *IEEE Trans. Audio Speech and Language* **22**(12):2025-2033, 2014 (doi 10.1109/TASLP.2014.2359628; QNRF NPRP 09-410-1-069)
41. Mark Hasegawa-Johnson, Jennifer Cole, Preethi Jyothi and Lav R. Varshney, “Models of Dataset Size, Question Design, and Cross-Language Speech Perception for Speech Crowdsourcing Applications,” *Laboratory Phonology* **6**(3-4):381-432, 2015, issn: 1868-6354
42. Po-Sen Huang, Minje Kim, Mark Hasegawa-Johnson and Paris Smaragdis, “Joint Optimization of Masks and Deep Recurrent Neural Networks for Monaural Source Separation,” *IEEE/ACM Trans. Audio, Speech and Language Processing* **23**(12):2136-2147 (2015), doi: 10.1109/TASLP.2015.2468583
43. Karen Livescu, Frank Rudzicz, Eric Fosler-Lussier, Mark Hasegawa-Johnson and Jeff Bilmes, “Speech Production in Speech Technologies: Introduction to the CSL Special Issue,” *Computer Speech and Language* **36**:165-172, 2016, issn: 0885-2308
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Conference Papers

All papers in this section are 4-10 page peer-reviewed papers. Common acronyms: ASRU=IEEE Workshop on Automatic Speech Recognition and Understanding. ICASSP=IEEE International Conference on Acoustics, Speech, and Signal Processing. ICPR=International Conference on Pattern Recognition, Interspeech=ICSLP=ISCA International Conference on Spoken Language Processing (name was changed in 2000), SpeechProsody=ISCA International Conference on Speech Prosody.

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