CURRICULUM VITAE

Hideki Kawahara

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1 Contact Information

Title:	Professor Emeritus, Wakayama University
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2 Personal Information

Date of birth:	1949
Place of birth:	Sapporo, Hokkaido, Japan
Citizenship:	Japanese
Gender and marital status:	male, married

3 Professional Experience

June 2017
> Visiting Researcher, RIKEN, Japan

August 2015–June 2016
> Visiting Research Scientist, Google UK, United Kingdom

April 2015
> Professor Emeritus, Wakayama University, Japan

August 2009–2013
> Director of the Center of Information Science, Wakayama University, Japan

April 1997–2015
> Professor, Faculty of Systems Engineering, Wakayama University, Japan

April 1997–2002
> Visiting Researcher, ATR (Advanced Telecommunication Research International), Japan

March 1992–March 1997
> Department Head, ATR Human Information Processing Research Laboratories, Japan

April 1986–February 1992
> Senior research supervisor, NTT Basic Research Laboratories, Japan

April 1984–March 1986
> Assistant director, Information Science Department, NTT Research Laboratories, Japan

April 1983–March 1984
> Senior researcher, Musashino Electrical Communication Laboratories, NTT, Japan

April 1981–March 1983
> Senior researcher, Yokosuka Electrical Communication Laboratories, NTT, Japan

April 1977–March 1981
> Researcher, Musashino Electrical Communication Laboratories, NTT, Japan

August 2009–March 2013
> Director, Center for Information Science, Wakayama University, Japan

April 1997–March 2005
> Visiting researcher, ATR Human Information Processing Research Laboratories, Japan

4 Education

1977
> Dr. Eng. in electrical engineering, Graduate School of Hokkaido University, Sapporo, Japan

1974
> M.E. in electrical engineering, Graduate School of Hokkaido University, Sapporo, Japan

1972
> B.E. in electrical engineering, Hokkaido University, Sapporo, Japan

5 Awards

2019 Distinguished Technical Contribution to Acoustics Award, the Acoustical Society of Japan

2015 2015–2016 Distinguished Lecturer, Asia Pacific Signal and Information Processing Association

2000 1998–1999 EURASIP Best Paper Award (Speech Communication)

1998 Technical Achievement and Paper Award, ATR, Japan

1998 TELECOM System Technology Prize from the Telecommunication Advancement Foundation, Japan

1997 Sato Paper Award (best paper award) from the Acoustical Society of Japan

6 Research Interests

- Speech signal processing based on auditory representations
- Singing voice analysis and synthesis
- Para- and non-linguistic aspects in speech communication
- Auditory perception and cognition
- Tools for speech and hearing research
- Acoustic signal processing

7 Publication

Book Chapter

1. Hideki Kawahara and Verena G. Skuk, "Voice Morphing," in eds. Sascha Frühholz and Pascal Belin, The Oxford Handbook of Voice Perception, Chapter 31, pp.685–706, (2018).

2. Hideki Kawahara, "Temporally Variable Multi attribute Morphing of Arbitrarily Many Voices for Exploratory Research of Speech Prosody," in eds. Keikichi Hirose and Jianhua Tao, Speech Prosody in Speech Synthesis: Modeling and generation of prosody for high quality and flexible speech synthesis, Springer, pp.109-120, 2015.

3. Toshio Irino, T. Fukawatase, M. Sakaguchi, R. Nisimura, H. Kawahara and R. D. Patterson, "Accurate estimation of compression in simultaneous masking enables the simulation of hearing impairment for normal-hearing listeners," in eds. B. C. J. Moore, R. D. Patterson, I. M. Winter, R.P. Calyon and H. E. Gockel, Basic Aspects of Hearing, Springer, pp.73-80, 2013.

4. Hideki Kawahara, Masanori Morise, Toru Takahashi, Ryuichi Nisimura, Hideki Banno, Toshio Irino,: STRAIGHT, a framework for speech analysis, modification and synthesis, in Computer processing of Asian spoken languages, (eds. Shuichi Itahashi and Chiu-yu Tseng), Consideration Books, Los Angeles, March 2010.

5. Kazuhiko Kakehi, Yuko Sogabe, Hideki Kawahara, Research on Emotional Perception of voices based on a morphing method, in Emotions in the Human Voice: Culture And Perception, K. Izdebski (Ed.) Plural Publishing, San Diego, pp.1-14 (2008.7)

6. Hideki Kawahara and Toshio Irino, Underlying principles of a high-quality speech manipulation system STRAIGHT and its application to speech segregation, in Speech separation by human and machines, ed. Pierre Divenyi, Kluwer Academic Publisher (2005.1).

7. R. E. Turner, M. A. Al-Hames, D. R. R. Smith, H. Kawahara, T. Irino, and R. D. Patterson , Vowel normalization: Time-domain processing of the internal dynamics of speech, in eds. P. Divenyi, Dynamics of Speech Production and Perception, NATO Science Series (2004.10)

8. Hidek Kawahara, STRAIGHT: An extremely high-quality VOCODER for auditory and speech perception research, in Computational Models of Auditory Function (Eds. Greenberg and Slaney), IOS Press, pp.343-354 (2001)

9. Hideki Kawahara, "Hearing Voice: Transformed Auditory Feesback Effects on Voice Pitch Control," in Computational Auditory Scene Analysis, Laurence Erlbaum, pp.335-350, 1998.

10. Hideki Kawahara and J. C. Williams, "Effects of auditory feedback on voice pitch trajectories: response characteristics to pitch perturbations," Volcal Fold Physiology, Singular Publishing Group, pp.263-278, 1996.

Journal Papers: refereed

1. Popham, Sara, Dana Boebinger, Dan PW Ellis, Hideki Kawahara, and Josh H. McDermott, "Inharmonic speech reveals the role of harmonicity in the cocktail party problem," Nature communications, Vol.9, no. 1 (2018): 2122.

2. Hideki Kawahara, "Application of Time-frequency Representations of Aperiodicity and Instantaneous Frequency for Detailed Analysis of Filled Pauses," Journal of the Phonetic Society of Japan, Vol.21(3), pp.63–73, 2017.

3. Matsui T, Irino T, Nagae M, Kawahara H, Patterson R. D., "The Effect of Peripheral Compression on Syllable Perception Measured with a Hearing Impairment Simulator," In Physiology, Psychoacoustics and Cognition in Normal and Impaired Hearing 2016 (pp. 307-314). Springer International Publishing.

4. Mizobuchi S., Nisimura R., Matsui T., Irino T., Kawahara H., "Singing voice conversion to growl-like singing based on vocal tract shape and glottal source characteristics," Trans. IEICEJ, Vol.99-D(3), pp. 283–292, 2016. (In Japanese)

5. Takashi Morimoto, Toshio Irino, Ryuichi Nisimura and Hideki Kawahara, "Effect of continuity and phonetic information on recognition of degraded word sounds," J. Acoustical Society of Japan, 70(11), pp.578-588, 2014. (in Japanese)

6. Schweinberger, S. R., Kawahara, H., Simpson, A. P., Skuk, V. G. and Zäske, R., "Speaker perception." WIREs Cogn Sci, 5(1), pp.15-25, 2014.
DOI: 10.1002/wcs.1261

7. Taiki Nishi, Ryuichi Nisimura, Toshio Irino and Hideki Kawahara, "Controlling linguistic information and filtered sound identity for a new cross-synthesis vocoder," Acousti. Sci. and Tech., 34(4), pp.287-288, 2013. (letter)

8. Toshio Irino, Yoshie Aoki, Hideki Kawahara, Roy. D. Patterson, "Comparison of performance with voiced and whispered speech in word recognition and mean-formant- frequency discrimination," Speech Communication,54(9), pp.998-1013, 2012.

9. Hideki Kawahara and Masanori Morise, "Technical foundations of TANDEM-STRAIGHT, a speech analysis, modification and synthesis framework," SADHANA - Academy Proceedings in Engineering Sciences, Vol.36, Part 5, pp.713-722, 2011.

10. Hayato Akagiri, Masanori Morise, Toshio Irino and Hideki Kawahara, "Evaluation and optimization of F0-adaptive spectral envelope extraction based on spectral smoothing with peak emphasis," IEICE Trans. Fundamentals, vol.J94-A, no.8, Aug. 2011. (in Japanese)

11. Erika Okamoto, Toshio Irino, Ryuichi Nisimura and Hideki Kawahara, "Evaluation of voice morphing using vocal tract length normalization based on auditory filterbank," Journal of Signal Processing, Vol.15, No.4, pp.283-286, July, 2011.

12. Masanori Morise, Hideki Kawahara, Takanobu Nishura, Rapid F0 estimation for high-SNR speech based on fundamental component extraction," IEICE Trans. Information Systems, vol.J93-D, no.2, Feb. 2010. (in Japanese)

13. Romi Zäske, Stefan R. Schweinberger, Hideki Kawahara, "Voice aftereffects of adaptation to speaker identity," Hearing Research, Volume 268, Issues 1-2, 1 September 2010, Pages 38-45,
DOI: 10.1016/j.heares.2010.04.011

14. Laetitia Bruckert, Patricia Bestelmeyer, Marianne Latinus, Julien Rouger, Ian Charest, Guillaume A. Rousselet, Hideki Kawahara, Pascal Belin, "Vocal Attractiveness Increases by Averaging," Current Biology, Volume 20, Issue 2, 116-120, 26 (January 2010),
DOI: 10.1016/j.cub.2009.11.034

15. Romi Zäske, Stefan R. Schweinberger, Jürgen M. Kaufmann, Hideki Kawahara, "In the ear of the beholder: neural correlates of adaptation to voice gender," European Journal of Neuro Science, Vol.30, No.3, pp.527-534 (August 2009),
DOI: 10.1111/j.1460-9568.2009.06839.x

16. Osamu Fujimura, Kiyoshi Honda, Hideki Kawahara, Yasuyuki Konparu, Masanori Morise and J.C. Williams, Noh Voice Quality, J. Logopedics Phoniatrics Vocology,34(4), 157-170 (04 June 2009),
DOI: 10.1080/14015430903002288

17. Masanori Morise, Toru Takahashi, Hideki Kawahara and Toshio Irino, "Speech analysis using temporally stable power spectrum estimation method for periodic signals," IEICE Trans. Fundamentals, Vol.J92-A,No.3,pp.163-171,Mar. 2009. (in Japanese)

18. Stefan R. Schweinberger, Christoph Casper, Nadine Hauthal, Jürgen M. Kaufmann, Hideki Kawahara, Nadine Kloth, David M.C. Robertson, Adrian P. Simpson and Romi Zäske, Auditory Adaptation in Voice Perception, Current Biology 18(9), 684-688, May 6, (2008).
DOI: 10.1016/j.cub.2008.04.015

19. Hideki Kawahara, Taichi Ikoma, Masanori Morise, Toru Takahashi, Ken'ichi Toyoda and Haruhiro Katayose, "Proposal on a morphing-based singing design manipulation interface and its preliminary study," J. Information Processing, Vol.48, No.12, pp.3637-3648 (2007), (in Japanese)

20. Masanori Morise, Toru Takahashi, Hideki Kawahara and Toshio Irino, "Power spectrum estimation method for periodic signals virtually irrespective of time window positioning," IEICE Trans. Information Systems, Vol.J90-D, No.12, pp.3265-3267 (2007), (letter, in Japanese)

21. Masanori Morise, Toshio Irino and Hideki Kawahara, "Error evaluation of impulse response measurement by cross spectral method using speech signal," IEICE Trans. Fundamentals, Vol.J90-A, No.7, pp.559-566(2007), (in Japanese)

22. Hideki Banno, Hiroaki Hata, Masanori Morise, Toru Takahashi, Toshio Irino and Hideki Kawahara, "Implementatioin of realtime STRAIGHT speech manipulation system: Report on its first implementation," Acoustic Science and Technology, Vol.28, No.3, pp.140-146 (2007)
DOI: 10.1250/ast.28.140

23. Mitsuyo Hashida, Noriko Nagata, Hideki Kawahara and Haruhiro Katayose, "A Performance Rendering Model for Polyphrase Ensemble," J. Information Processing, Vol.48, No.1, pp. 248-257 (2007), (in Japanese).

24. Toshio Irino, Roy D. Patterson, and Hideki Kawahara, "Speech segregation using an auditory vocoder with event-synchronous enhancements," IEEE Trans. Speech and Audio Process., Vol.27, Issue 6, pp.2212-2221 (2006).
DOI: 10.1109/TASL.2006.872611

25. Masanori Morise, Toshio Irino, Hideki Banno, and Hideki Kawahara "Warped-TSP: An acoustic measurement signal robust against background noise and harmonic distortions," IEICE Trans. Fundamentals, Vol.J89-A,No.1,pp.7-14, (Jan. 2006), (in Japanese)

26. David R. R. Smith, Roy D. Patterson, Richard Turner Hideki Kawahara and Toshio Irino, The processing and perception of size information in speech sounds, Journal of the Acoustical Society of America, Vol.117, No.1, pp.305-318 (2005).
DOI: 10.1121/1.1828637

27. Masumi Nukina and Hideki Kawahara, "Transfer characteristics of speech sounds around speaker's head," J. Acoust. Soc. Japan, vol.59, no.5, pp.256-260, May, 2003. (short paper: in Japanese)

28. Alain de Cheveigné and Hideki Kawahara, "YIN, a fundamental frequency estimator for speech and music," Journal of the Acoustical Society of America, Vol.111, No.4, pp.1917-1930 (2002)

29. Hideki Kawahara and Haruhiro Katayose, "Scat generation research program based on STRAIGHT, a high-quality speech analysis modification and synthesis system," J. Information Processing, Vol.43, No.2, pp. 208-218, Feb. 2002, (in Japanese).

30. Hideki Banno, Jinlin Lu, Satoshi Nakamura, Kiyohiro Shikano and Hideki Kawahara, "Efficient representation of short-time phase based on time-domain smoothed group delay," IEICE Trans. D-II, Vol.J84-D-II, No.4, pp.621-628, Apr. 2001. (in Japanese)

31. Hideki Banno, Jinlin Lu, Satoshi Nakamura, Kiyohiro Shikano and Hideki Kawahara, "Speech manipulation method using phase manipulation based on time-domain smoothed group delay," IEICE Trans. D-II, Vol.J83-D-II, No.11, pp.2276-2282, Nov. 2000. (in Japanese)

32. Yoshinori Atake, Toshio Irino, Hideki Kawahara, Satoshi Nakamura and Kiyohiro Shikano, "Robust estimation of fundamenta frequency using instantaneous frequencies of harmonic components," IEICE Trans. D-II, Vol.J83-D-II, No.11, pp.2077-2086, Nov. 2000. (in Japanese)

33. Alain de Cheveigné, and Hideki Kawahara, "Missing-data model of vowel identification," J. Acoust. Soc. Am., Vol.105, pp.3497-3508, 1999.

34. Hideki Kawahara, Ikuyo Masuda-Katsuse and Alain de Cheveigné, "Restructuring speech representations using a pitch-adaptive time-frequency smoothing and an instantaneous-frequency-based F0 extraction, Possible role of a repetitive structure in sounds," Speech Communication, Vol.27, no.3, pp.187-207 (1999).

35. Alain de Cheveigné and Hideki Kawahara, "Multiple period estimation and pitch perception model," Speech Communication, Vol.27, no.3, pp.175-186 (1999).

36. Ikuyo Masuda-Katsuse and Hideki Kawahara, "Dynamic sound stream formation based on continuity of spectral change," Speech Communication, Vol.27, no.3, pp.235-259 (1999).

37. Hiroko Kato and Hideki Kawahara, "An application of the Bayesian time series model and statistical system analysis for F0 control," Speech Communication, Vol.24, no.4, pp.325-339, (1998)

38. Alain de Cheveigné, Hideki Kawahara, Minoru Tsuzaki, and Kiyoaki Aikawa, "Concurrent vowel identification I: effects of relative amplitude and F0 differences," J. Acoust. Soc. Am., Vol.101, pp.2839-2847 (1997.5)

39. Reiko Akahane-Yamada, Takahiro Adachi and Hideki Kawahara, "Second language production training using spectrographic representations as feedback," J. Acoust. Soc. Japan (E), Vol.18, pp.341-343 (1997).

40. Kiyoaki Aikawa and Hideki Kawahara, "Neural operation model for tracking complex frequency-modulated tones," J. Acoust. Soc. Japan, Vol.53, no.2, pp.95-102, Feb.1997. (in Japanese)

41. Kiyoaki Aikawa, Minoru Tsuzaki, Hideki Kawahara and Yoh'ichi Tohkura, "On the dynamic characteristics of the tracking of fequency-modulated tones," J. Acoust. Soc. Japan, Vol.52, no.10, pp.741-751, Oct.1996. (in Japanese)

42. Kiyoaki Aikawa, Harald Singer, Hideki Kawahara and Yoh'ichi Tohkura, "Cepstral representation of speech motivated by time-frequency masking: an application to speech recognition," J. Acoust. Soc. Am., Vol.100, No.1, pp.603-614 (1996.7)

43. Alain de Cheveigné, Hideki Kawahara, Kiyoaki Aikawa and Andrew P. Lea : "Speech separation for speech recognition," J. de Physique IV, C5, pp.545-548, (1994.5)

44. Hideki Kawahara, "Interactions between speech produciton and perception under auditory feedback perturbations on fundamental frequencies," J. Acoust. Soc. Japan (E), Vol.15, No.3, pp.201-202 (1994.5), (letter)

45. Kazuaki Obara, Kiyoaki Aikawa and Hideki Kawahara, "Speech recognition using auditory filter model incorporating spectro-temporal masking," J. Acoust. Soc. Japan, Vol.50, no.5, pp.345-352 (1994.5) (in Japanese)

46. Toshio Irino and Hideki Kawahara, "Signal reconstruction from modified auditory wavelet transform," IEEE Trans. Signal Processing, Vol.41, No.12, pp.3549-3554 (1993.12).

47. Kiyoaki Aikawa, Hideki Kawahara and Yoh'ichi Tohkura, "Phoneme recognition using a dynamic cepstrum parameter incorporating the time-frequency characteristics of forward masking," IEICE Trans. A, Vol.J76-A, no.11, pp.1514-1521, Nov. 1993. (in Japanese)

48. Shin Suzuki and Hideki Kawahara, "Criterion based on the squared sum on mean curvatures for artificial neural network," IEICE Trans. D-II, Vol.J75-D II, no.3, pp.637-645, Mar. 1992. (in Japanese)

49. Toshio Irino and Hideki Kawahara, "A method for designing neural networks using nonlinear multivariate analysis: application to speaker-independent vowel recognition," Neural Computation, vol.2, pp.386-397 (1990)

50. Hideki Kawahara and Kazuhiko Kakehi, "On a new estimation method for speech loudness function," J. Acoust. Soc. Japan, Vol.37, no.1, pp.26-32, Dec. 1980. (in Japanese)

51. Hideki Kawahara, Koji Tochinai and Kuniichi Nagata, "On the linear predictive analysis using a small analysis segment and its error evaluation," J. Acoust. Soc. Japan, Vol.33, no.9, pp.470-479, Sep. 1977. (in Japanese)

Invited talks at international conferences and workshops

1. Hideki Kawahara, "Revisiting phase-based attributes for better understanding of speech sounds," Tutorial talk at CCF Voice Dialogue and Hearing Professional Working Group Annual Meeting, Xining, Chine, August.14, 2019

2. Hideki Kawahara, "Making Speech Tangible for a Better Understanding of Human Speech Communication," S4P Summer School on Speech Signal Processing 2018, Gandhinagar, India, 9-11, September, 2018.

3. Hideki Kawahara, "Making speech tangible for a better understanding of human speech communication," Keynote Speech at the 21th International Conference on Asian Language Processing, Singapore, 5-7 December, 2017.

4. Hideki Kawahara, "Speech Analysis Modification and Synthesis tool STRAIGHT and extended voice morphing," in ToolShop: Workshop for Auditory Research Software, ARO midwinter meeting, Baltimore USA, 21-25, Feb. 2015.

5. Hideki Kawahara, "STRAIGHT speech analysis," Tutorial of APSIPA ASC 2014, Siem Reap, Cambodia, 9-12 Dec., 2014.

6. Hideki Kawahara, "New dimensions of voice attributes modification for exploratory research on person related information," 7th PPRU Workshop, Jena Germany, 26, April, 2013. (invited talk)

7. Hideki Kawahara, "Excitation source structural analysis of Japanese traditional singing voices," Acoustics 2012, Hong Kong China, 14-18 May 2012. (invited talk)

8. Hideki Kawahara, "A new dimension of voice quality manipulation," LISTA workshop 2012, Edinburgh UK, 2-3 May 2012. (invited talk)

9. Hideki Kawahara, "In search of perceptually relevant speech representations, - STRAIGHT, TANDEM-STRAIGHT and beyond -," NCSP2011, pp.252-155, 2011. (plenary talk)

10. Hideki Kawahara, "Exploration of the other aspect of Vocoder revisited, – A-Z STRAIGHT, TANDEM-STRAIGHT and morphing –," 7th ISCA Speech Synthesis Workshop (SSW7), Kyoto Japan, 22 September, 2010. (invited talk)

11. Hideki Kawahara, "Looking into the past: Power spectral representation of periodic signals, sampling theories and fundamental frequency estimation for remaking speech," The 6th ISCSLP 2008, Kunming, Chine, 16-19 December, 2008. (Keynote lecture)

12. Hideki Kawaahra, "TANDEM-STRAIGHT, a research tool for L2 study enabling flexible manipulations of prosodic information," Speech Prosody 2008, Campinas Brazil, May 6-9 2008. (Keynote lecture)

13. Hideki Kawahara, Remaking Speech Revisited – STRAIGHT and TANDEM-STRAIGHT and Their Implications, Asian Workshop on Speech Science and Technology, Tokyo, Japan, Mar 20, 2008 (invited talk)

14. Hideki Kawahara, "Application and extensions of STRAIGHT-based morphing for singing voice manipulations based on vowel centered approach," Proc. ICA2007, Madrid (2007) (invited talk)

15. Hideki Kawahara, "Computational basis of illusionary pitch perception," International Congress on Acoustics Kyoto, vol.2, pp.1081-1084, 2004. (Invited talk)

16. Hideki Kawahara and Toshio Irino, Underlying principles of a high-quality speech manipulation system STRAIGHT and its application to speech segregation, Perspectives on Speech Separation ? a Workshop (NSF), October 31 - November 2, 2003,Montreal, Quebec (2003) (invited talk)

Refereed Conference paper

1. Hideki Kawahara, Ken-Ichi Sakakibara, Eri Haneishi, Kaori Hagiwara, "Real-time and Interactive Tools for Vocal Training Based on an Analytic Signal with a Cosine Series Envelope," Proceedings of APSIPA Annual Summit and Conference 2019, Lanzhou, China, pp.907-910, 18-21 November 2019

2. Hideki Kawahara, Ken-Ichi Sakakibara, Mitsunori Mizumachi, Hideki Banno, Masanori Morise, Toshio Irino, "Frequency Domain Variant of Velvet Noise and Its Application to Acoustic Measurements," Proceedings of APSIPA Annual Summit and Conference 2019, Lanzhou, China, pp.1523-1532, 18-21 November 2019

3. Terasawa, H., Wakasa, K., Kawahara, H., Sakakibara, K. (2019) Investigating the Physiological and Acoustic Contrasts Between Choral and Operatic Singing. Proc. Interspeech 2019, 2025-2029,

4. Kawahara, H., Morise, M. and Hua, K., 2018, November. Revisiting spectral envelope recovery from speech sounds generated by periodic excitation. In 2018 Asia-Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA ASC) (pp. 1674-1683). IEEE.

5. Kawahara, H., Sakakibara, K., Morise, M., Banno, H., Toda, T., Irino, T. (2018) Frequency Domain Variants of Velvet Noise and Their Application to Speech Processing and Synthesis. Proc. Interspeech 2018, 2027-2031,

6. Kawahara, H., Sakakibara, K.I., Morise, M., Banno, H. and Toda, T., 2017, December. Accurate estimation of f 0 and aperiodicity based on periodicity detector residuals and deviations of phase derivatives. In 2017 Asia-Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA ASC) (pp. 1556-1564). IEEE.

7. Kawahara, H., Sakakibara, K., Morise, M., Banno, H., Toda, T., Irino, T. (2017) A New Cosine Series Antialiasing Function and its Application to Aliasing-Free Glottal Source Models for Speech and Singing Synthesis. Proc. Interspeech 2017, 1358-1362, DOI:

8. Matsui, T., Irino, T., Yamamoto, K., Kawahara, H., Patterson, R.D. (2017) The Effect of Spectral Tilt on Size Discrimination of Voiced Speech Sounds. Proc. Interspeech 2017, 601-605,

9. Kawahara, H., Sakakibara, K., Morise, M., Banno, H., Toda, T. (2017) A Modulation Property of Time-Frequency Derivatives of Filtered Phase and its Application to Aperiodicity and fo Estimation. Proc. Interspeech 2017, 424-428,

10. H. Kawahara, Y. Agiomyrgiannakis, H. Zen, "Using instantaneous frequency and aperiodicity detection to estimate F0 for high-quality speech synthesis," ISCA SSW9, Sept. 2016.

11. H. Kawahara, "SparkNG: Interactive Matlab tools for introduction to speech production, perception and processing fundamentals and application of the aliasing-free L-F model component," Interspeech 2016 (Show and tell), pp.1180–1181, Sept. 2016.

12. M. Morise, H. Kawahara, "TUSK: A framework for overviewing the performance of F0 estimators," Interspeech2016, pp.1790–1794, Sept. 2016.

13. H. Kawahara, K. Sakakibara, H. Banno, M. Morise, T. Toda and T. Irino, "Aliasing-free implementation of discrete-time glottal source models and their applications to speech synthesis and F0 extractor evaluation," APSIPA ASC 2015, 520-529, Dec. 2015.

14. Haneishi, E., H. Kawahara, K. Hagiwara, R. Oribe, H. Takemoto, and K. Honda. "A preliminary study on diaphragm motions and vocal tract configurations during singing: analyses of real-time MRI and acoustic data," In PAN EUROPEAN VOICE CONFERENCE ABSTRACT BOOK, p. 120., Sept.2015.

15. K. Yamamoto, T. Irino, R. Nisimura, Ryuichi, H. Kawahara, R. D. Patterson, "How the slope of the speech spectrum affects the perception of speaker size," In INTERSPEECH-2015, 1556-1560, Sept. 2015.

16. Toshie Matsui, Toshio Irino, Misaki Nagae, Hideki Kawahara, and Roy D. Patterson, "The effect of peripheral compression on syllable perception measured with a hearing impairment simulator," 17th International Symposium on Hearing , Groningen, Netherlands,15-19 June 2015.

17. Hideki Kawahara, Masanori Morise, Ken-Ichi Sakakibara, Tomoki Toda, Hideki Banno Ryuichi Nisimura, Toshio Irino, "Excitation source design for high-quality speech manipulation systems based on a temporally static group delay representation of periodic signals," APSIPA ASC 2014, Siem Reap, Cambodia, 9-12 Dec., 2014.

18. Misaki Nagae, Toshio Irino, Ryuichi Nisimura, Hideki Kawahara, Roy D. Patterson, "Hearing impairment simulator based on compressive gammachirt filter," APSIPA ASC 2014, Siem Reap, Cambodia, 9-12 Dec., 2014.

19. Hideki Kawahara, Masanori Morise, Tomoki Toda, Hideki Banno Ryuichi Nisimura, Toshio Irino, "Excitation source analysis for high-quality speech manipulation systems based on an interference-free representation of group delay with minimum phase response compensation," Proc. Interspeech 2014, pp.2243-2247, Sept. 2014.

20. Hideki Kawahara, Tatsuya Kitamura, Hironori Takemoto, Ryuichi Nisimura, Toshio Irino, "Vocal tract length estimation based on vowels using a database consisting of 385 speakers and a database with MRI-based vocal tract shape information," Proc. Interspeech 2014, pp.870-874, Sept. 2014.

21. Minori Matsuyama, Ryuichi Nisimura, Hideki Kawahara, Junnosuke Yamada, and Toshio Irino, "Development of a mobile application for crowdsourcing the data collection of environmental sounds," in Sakae Yamamoto (Ed.): Human Interface and the Management of Information, Information and Knowledge Design and Evaluation, Lecture Notes in Computer Science, Volume 8521, pp. 514-524,Springer International Publishing, (2014), presented at HCI International 2014,

22. Ryuichi Nisimura, Kazuki Hashimoto, Hideki Kawahara, and Toshio Irino, "Proposal for an interactive 3D sound playback interface controlled by user behavior," in Constantine Stephanidis (Ed.): HCI International 2014 - Posters' Extended Abstracts, Part I, Communications in Computer and Information Science, Volume 434, pp. 446-450, Springer International Publishing, (2014)

23. H. Kawahara, M. Morise, K. Sakakibara, "Temporally fine F0 extractor applied for frequency modulation power spectral analysis of singing voices," Proc. MAVEBA 2013, Firenze, Italy, 16-18 December, pp.125-128, 2013. (17/Dec./2013)

24. M. Sakaguchi, M. Kobayashi, R. Nisimura, T. Irino, H. Kawahara, "Spectrally estimated vocal tract lengths of singing voices and their contributing factors," Proc. MAVEBA 2013, Firenze, Italy, 16-18 December, pp.121-124, 2013. (17/Dec./2013)

25. Hideki Kawahara, Masanori Morise, Hideki Banno, and Verena G. Skuk, "Temporally variable multi-aspect N-way morphing based on interference-free speech representations," Proc. APSIPA ASC 2013, Kaohsiung, Taiwan, OS.28-SLA.9, 2013. (31/Oct./2013)

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144. Kazuhiko Kakehi and Hideki Kawahara, "Neural network research in Japan", Presented at the Lyon Conference: NEURAL NETWORKS - Biological Computers of Electronic Brains, Lyon (France), (1990.3),

145. Toshio Irino and Hideki Kawahara, "Vowel-feature extraction from cochlear vibration using neural networks," The first meeting of the International Neural Networks Society (Neural Networks), Vol.1, Suppl. 1, p.300, (1988.9),

Unrefereed conference and workshop papers

More than 300 unrefereed papers were published. No comprehensive list is ready. The following link has a partial list (partially in Japanese);

   http://www.wakayama-u.ac.jp/˜kawahara/KWbib.html

Invited Reviews

1. Ken-Ichi Sakakibara, Hideki Kawahara, "Recommended protocols for acoustic recording of speech data for high reusability," Journal of the Acoustical Society of Japan, Vol.76, No.6, pp.343-350, (2020). (in Japanese)

2. Hideki Kawahara, "Essentials of impulse responses," Journal of the Acoustical Society of Japan, Vol.76, No.3, pp.148-155, (2020). (in Japanese)

3. Hideki Kawahara, "Pitfalls in digital signal processing," Journal of the Acoustical Society of Japan, Vol.73, No.9, pp.592-599, (2017). (in Japanese)

Last update: February 14, 2021

4. Hideki Kawahara, "Speech Analysis, Modification and Synthesis Foundation STRAIGHT and its Applications," Journal of the Japan Society of Software Science and Technology, Vol.32, No.3, pp.23–28 (2015). (In Japanese)

5. Hideki Kawahara, "Investigating diversity of voice attributes using extended morphing tools and realtime visualization," Journal of the Phonetic Society of Japan, Vol.18, No.3, pp.43-52 (2014). (in Japanese)

6. Hideki Kawahara, "Recent trends in speech analysis and synthesis," J. Acoust. Soc. Japan, Vol.67, No.1, pp.40-45 (2011). (in Japanese)

7. Hideki Kawahara, "Recent trend in singing information processing," The journal of the Institute of Electrical Engineers of Japan, Vol.130, no.6, pp.360-363, June, 2010. (in Japanese).

8. Kiyohiro Shikano, Kazuya Takeda, Tatsuya Kawahara, Hideki Kawahara, Hiroshi Saruwatari, Keiichi Tokuda, Akinobu Lee, Hiromichi Kawanami, Ryuichi Nishimura, Randy GOMEZ, Tomoki Toda, Takanobu Nishiura, Toru Takahashi, Hideki Banno, Heiga Zen, E-Society Software Development Project for Speech Recognition and Synthesis, Journal of IEICE, vol.92, no.6, June 2009 (in Japanese).

9. Hideki Kawahara and Masanori Morise, "TANDEM-STRAIGHT and voice morphing: Applications to emotional speech and singing research," J. Phonetic Society of Japan, Vol.13, No.1, pp.29-39 (2009), (in Japanese)

10. Hideki Kawahara, "STRAIGHT: Exploitation of the other aspect of VOCODER." J. Acoust. Soc. Japan, Vol.63, No.8, pp.442-449 (2007), (in Japanese)

11. Hideki Kawahara, "STRAIGHT, Exploration of the other aspect of VOCODER: Perceptually isomorphic decomposition of speech sounds," Acoustic Science and Technology, Vol.27, No.6, pp.349-353 (2006). DOI: 10.1250/ast.27.349

8 Software

CAPRICEP: Cascaded All-Pass filters with Randomized CEnter frequencies and Phase polarities (2020)
Available online: https://github.com/HidekiKawahara/CAPRICEP

FVN: Frequency domain variant of Velvet Noise and tools (2019)
Available online: https://github.com/HidekiKawahara/FVN

Real-time and interactive tool for vocal training (2018)
Available online: https://github.com/HidekiKawahara/voiceRTFB

Matlab realtime speech tools for education: SparkNG (2014)
Available online: https://github.com/HidekiKawahara/SparkNG

Temporally variable multi aspect N-way morphing (2013)
Application extension of TANDEM-STRAIGHT

TANDEM-STRAIGHT (2008)
Speech analysis, modification and resynthesis framework

STRAIGHT: aka legacy-STRAIGHT (1997)
Speech analysis, modification and resynthesis framework
Available online: https://github.com/HidekiKawahara/legacy_STRAIGHT

Speech factory (1989)
Speech analysis and editor with GUI, commercial product by NTT advance technology, Japan

Oekaki (1986)
Drawing software for PC9810, public domain software for JUNET (precursor of Japanese Internet)

9 Professional activities

Professional societies

- The Acoustical Society of America
  Speech communication TC member

- The Acoustical Society of Japan
  Board member, Chair of Kansai region

- IEEE
  SLTC member

- The Institute of Electronics, Information and Communication Engineers (IEICE, Japan)

- International Speech Communication Association (ISCA)

- Neural Network Society of Japan

International Conferences and Workshops

2010 Intersinging workshop Satellite to Interspeech 2010, Tokyo Japan, (organizer)

2004 Wave workshop Satellite to ICA 2004, Wakayama Japan, (organizer)

2002 ICAD The Eighth International Conference on Auditory Display, ATR Kyoto Japan, (program chair)

1998 CREST workshop Workshop on Stable representations for periodic sounds, Nagoya Japan, (organizer)

1994 ATR workshop Workshop on a biological framework for speech perception and production, Kyoto Japan, (organizer)

Session chair Conferences including; ICASSP, Eurospeech, ICSLP, Interspeech, ASA meetings, and others.

Reviewer Conferences including; ICASSP, ICSLP, Interspeech, and others.

Grants

- Kakenhi, Challenging Exploratory Research, 16H01734: April 2016–March 2018, (PI)

- Kakenhi, Scientific Research (A), 16K12464: April 2016–March 2020 (Member, PI: Toshio Irino)

- Kakenhi, Scientific Research (B), 15H02726: April 2015–March 2018, (PI)

- Kakenhi, Scientific Research (B), 15H03207: April 2015–March 2019, (Member, PI: Ken-Ichi Sakakibara)

- Kakenhi, Challenging Exploratory Research, 26540087: April 2014–March 2016, (PI)

- Kakenhi, Scientific Research (C), 25370117: April 2013–March 2016, (member, PI: Eri Haneishi)

- Kakenhi, Scientific Research (B), 25280063: April 2012–March 2016, (member, PI: Toshio Irino)

- Kakenhi, Scientific Research (B), 26284062: April 2012–March 2017, (member, PI: Kikuo Maekawa)

- Kakenhi, Scientific Research (B), 24300073: April 2012–March 2014, (PI)

- Kakenhi, Challenging Exploratory Research, 24650085: April 2012–March 2014, (PI)

- Kakenhi, Challenging Exploratory Research, 22650042: April 2010–March 2012, (PI)

- Kakenhi, Scientific Research (B), 21300069: April 2009–March 2013, (member, PI: Toshio Irino)

- Kakenhi, Scientific Research (A), 19200017: April 2007–March 2011, (PI)

- Kakenhi, Scientific Research (B), 18300060: April 2006–March 2009, (member, PI: Toshio Irino)

- Kakenhi, Scientific Research (B), 18300064: April 2006–March 2009, (member, PI: Fumitada Itakura)

- Kakenhi, Challenging Exploratory Research, 18652040: April 2006–March 2009, (member, PI: Toshio Irino)

- CREST, CrestMuse Project, 2005–2002, (member, PI: Haruhiro Katayose), 300,000,000 Yen

- Kakenhi, Challenging Exploratory Research, 17650054: April 2005–March 2007, (PI)

- Kakenhi, Challenging Exploratory Research, 17650077: April 2005–March 2007, (member, PI: Kazuhiko Kakehi)

- Kakenhi, Challenging Exploratory Research, 15650032: April 2003–March 2005, (PI)

- Kakenhi, Scientific Research (B), 15300061: April 2003–March 2006, (member, PI: Toshio Irino)

- e-Society, Software Foundation for Flexible Speech Dialogue Technology, 2003–2007, (member, PI: Kiyohiro Shikano) 300,000,000 Yen

- Kakenhi, Scientific Research (B), 14380159: April 2002–March 2005, (member, PI: Kazuhiko Kakehi)

- Kakenhi, Scientific Research (B), 14380165: April 2012–March 2014, (PI)

- Kakenhi, Scientific Research (C), 11650425: April 1999–March 2002, (PI)

- CREST, Auditory Brain Project, 1997–2002, (PI), 220,000,000 Yen

- Kakenhi, Scientific Research (B), 07308026: April 1995–March 1997, (member, PI: Kazuhiko Kakehi)

Notes

Kakenhi Grants-in-Aid for Scientific Research by Japan Society for the Promotion of Science (JSPS). http://www.jsps.go.jp/english/e-grants/

CREST Core Research for Evolutionary Science and Technology by Japan Science and Technology Agency (JST) http://www.jst.go.jp/kisoken/crest/en/index.html

e-Society The leading projects of Ministry of Education, Culture, Sports, Science and Technology, Japan.

10 Students advising

PhD Students as principal supervisor

Masanori Morise, 2008

Mitsuyo Hashida, 2006

11 Miscellaneous

Amateur singer 1968–1975, member of NHK broadcasting chorus, Sapporo Japan