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Longbiao Wang received his Dr. Eng. degree from Toyohashi University of Technology, Japan, in 2008. He was an assistant professor in the faculty of Engineering at Shizuoka University, Japan from April 2008 to September 2012. He was an associate professor at Nagaoka University of Technology, Japan from Sep. 2012 to Aug. 2016. Since Sep. 2016 he has been a professor at Tianjin University, Japan. His research interests include robust speech recognition, speaker recognition and acoustic signal processing. He received the “Chinese Government Award for Outstanding Self-financed Students Abroad” in 2008, “National youth one thousand talents” and “Tianjin one thousand talents”. He has published more than 80 journals and international conference papers including IEEE/ACM TASLP, Speech Communication and ICASSP etc. He is a member of IEEE, ISCA, APSIPA, IEICE and ASJ.

Research Interests

- Robust speech recognition
- Robust speaker recognition
- Acoustic signal processing

Education

- 2000.07 B.E., Department of Computer Sciences and Technology, Fuzhou University,
China
- 2005.03 M.E., Department of Information and Computer Sciences, Toyohashi
University of Technology, Japan
- 2008.03 Ph.D., Department of Information and Computer Sciences, Toyohashi
University of Technology, Japan

Work Experience

- 2000.07~2002.08

Fujian Branch of China Construction Bank, China
Software Development, Network Management
- 2008.04~2012.9

Assistant Professor, Faculty of Engineering, Shizuoka University, Japan
- 2012.10~2016.8

Associate Professor, Nagaoka University of Technology, Japan
- 2016.09~

Professor, Tianjin University, China

Book Chapters

1. Y. Kawakami, L. Wang, A. Kai and S. Nakagawa, “Speaker Identification by Combining Various Vocal Tract and Vocal Source Features”, P. Sojka et al. (Eds.), Lecture Notes in

- Artificial Intelligence, Springer LNAI 8655, pp. 382-389, 2014.
2. Longbiao Wang, Kyohei Odani, Atsuhiko Kai, Norihide Kitaoka and Seiichi Nakagawa, "Dereverberation Based on Spectral Subtraction by Multi-channel LMS Algorithm for Hands-free Speech Recognition", Chapter in Modern Speech Recognition Approaches with Case Studies, S. Ramakrishnan (Eds.), IN-TECH, ISBN 978-953-51-0831-3, pp. 155-174 (2012).
 3. Longbiao Wang, Kyohei Odani and Atsuhiko Kai, "Evaluation of hands-free large vocabulary continuous speech recognition by blind dereverberation based on spectral subtraction by multi-channel LMS algorithm", Ivan Habernal, Václav Matousek (Eds.), Lecture Notes in Artificial Intelligence, Springer LNAI6836, ISBN 978-3-642-23537-5, pp. 131-138, 2011.

Journal (*:Corresponding author)

1. B. Ren, L. Wang*, L. Lu, Y. Ueda and A. Kai, "Combination of bottleneck feature extraction and dereverberation for distant-talking speech recognition", Multimedia Tools and Applications, Vol. 75, No. 9, pp. 5093-5108, 2016 (DOI: 10.1007/s11042-015-2849-1).
2. K. Phapatanaburi, L. Wang*, R. Sakagami, Z. Zhang, X. Li and M. Iwahashi, "Distant-talking accent recognition by combining GMM and DNN", Multimedia Tools and Applications, Vol. 75, No. 9, pp. 5109-5124, 2016 (DOI: 10.1007/s11042-015-2935-4).
3. Yuma Ueda, Longbiao Wang*, Atsuhiko Kai, Xiong Xiao, EngSiong Chng and Haizhou Li, "Single-channel dereverberation for distant-talking speech recognition by combining denoising autoencoder and temporal structure normalization", Journal of Signal Processing Systems, Vol. 82, No. 2, pp. 151-161, 2016 (DOI: 10.1007/s11265-015-1007-3).
4. Y. Ueda, L. Wang*, A. Kai and B. Ren, "Environment-dependent denoising autoencoder for distant-talking speech recognition", Eurasip Journal on Advances in Signal Processing, 2015:92, pp. 1-11, 2015 (DOI: 10.1186/s13634-015-0278-y).
5. Z. Zhang, L. Wang*, A. Kai, K. Odani, W. Li and M. Iwahashi, "Deep neural network-based bottleneck feature and denoising autoencoder-based dereverberation for distant-talking speaker identification", Eurasip Journal on Audio, Music and Speech Processing, 2015:12, pp. 1-13, 2015 (DOI: 10.1186/s13636-015-0056-7).
6. W. Li, L. Wang*, Y. Zhou, J. Dines, H. Bourlard and Q. Liao, "Feature Mapping of Multiple Beamformed Sources for Robust Overlapping Speech Recognition Using a Microphone Array", IEEE/ACM Transactions on Audio, Speech and Language Processing, Vol. 22, No. 12, pp. 2244-2255, Dec. 2014.
7. Y. Jiang, K. Lee, L. Wang*. "PLDA for Speaker Verification in the I-supervector Spaces", Eurasip Journal on Audio, Music and Speech Processing, 2014:29, pp. 1-13, Jul. 2014.

8. Z. Zhang, L. Wang* and A. Kai, "Distant-talking speaker identification by generalized spectral subtraction-based dereverberation and its efficient computation", *Eurasip Journal on Audio, Music and Speech Processing*, 2014:15, pp. 1-12, Apr. 2014.
9. W. Li, L. Wang, Y. Zhou, H. Bourlard and Q. Liao*, "Robust log-energy estimation and its dynamic change enhancement for in-car speech recognition", *IEEE Transactions on Audio, Speech and Language Processing*, Vol. 21, No. 8, pp. 1689-1698, 2013.
10. S. Nakagawa, L. Wang* and S. Ohtsuka, "Speaker identification and verification by combining MFCC and phase information", *IEEE Transactions on Audio, Speech and Language Processing*, Vol. 20, No. 4, pp. 1085-1095, May 2012.
11. L. Wang*, K. Odani and A. Kai, "Dereverberation and Denoising Based on Generalized Spectral Subtraction by Multi-channel LMS Algorithm Using a Small-scale Microphone Array", *Eurasip Journal on Advanced in Signal Processing*, 2012:12, Jan. 2012.
12. Y. Jiang*, Z. Tang and L. Wang, "Identification of a distant speaker and its robustness", *Chinese Journal of Electronics*, Vol. 20, No. 2, pp. 278-282, Apr. 2011.
13. L. Wang*, N. Kitaoka and S. Nakagawa, "Distant-talking speech recognition based on spectral subtraction by multi-channel LMS algorithm", *IEICE Trans. on Information and Systems*, Vol. E94-D, No.3, pp. 659-667, Mar. 2011.
14. L. Wang*, K. Minami, K. Yamamoto and S. Nakagawa, "Speaker recognition by combining MFCC and phase information in noisy conditions", *IEICE Trans. on Information and Systems*, Vol. E93-D, No. 9, pp. 2397-2406, Sep. 2010.
15. L. Wang*, S. Nakagawa and N. Kitaoka, "Robust speech recognition by combining short-term and long-term spectrum based position-dependent CMN with conventional CMN", *IEICE Trans. on Information and Systems*, Vol. E91-D, No. 3, pp. 457-466, March 2008.
16. L. Wang*, N. Kitaoka and S. Nakagawa, "Robust distant speaker recognition based on position-dependent CMN by combining speaker-specific GMM with speaker-adapted HMM", *Speech Communication*, Vol. 49, No.6, pp. 501-513, Jun. 2007.
17. L. Wang*, N. Kitaoka and S. Nakagawa, "Robust Distant Speech Recognition by Combining Multiple Microphone-array Processing with Position-dependent CMN", *EURASIP Journal on Applied Signal Processing*, Vol. 2006, Article ID 95491, pp. 1-11, 2006.

International conference

1. Z. OO, Y. Kawakami, L. Wang, S. Nakagawa, X. Xiao and M. Iwahashi, " DNN-based Amplitude and Phase Feature Enhancement for Noise Robust Speaker Identification ", *Proc. of Interspeech*, 2016.
2. Y. Wang, S. Yu, W. Li, L. Wang and Q. Liao, "FACE RECOGNITION WITH LOCAL CONTOURLET COMBINED PATTERNS," *Proc. of IEEE ICASSP*, pp. 1274-1278, 2016.
3. Shengkui Zhao, Xiong Xiao, Zhaofeng Zhang, Thi Ngoc Tho Nguyen, Xionghu Zhong, Bo Ren, Longbiao Wang, Douglas L. Jones, Eng Siong Chng, Haizhou Li, "ROBUST

SPEECH RECOGNITION USING BEAMFORMING WITH ADAPTIVE MICROPHONE GAINS AND MULTICHANNEL NOISE REDUCTION," Proc. of ASRU pp. 460-467, 2015.

4. Z. Zhang, J. Deng, L. Wang and X. Xiao, "A Spectrum Smoothing Method for Speaker Verification," Proc. of APSIPA ASC 2015, pp. 1291-1295, 2015.
5. Bo Ren, L. Wang, Y. Ueda, A. Kai and Z. Zhang, "Speech selection and environmental adaptation for asynchronous speech recognition," Proc. of APSIPA ASC, pp. 119-124, 2015.
6. Zhaogui Ding, Liming Zhang, Longbiao Wang, Weifeng Li, " Dual-channel speech separation using interaural time difference with Generalized Gaussian Mixture Model", Proc. 4th International Conference on Information Technology and Management Innovation, pp. 1157-1163, 2015.
7. L. Wang, Y. Yoshida, Y. Kawakami and S. Nakagawa, "Relative phase information for detecting human speech and spoofed speech", Proc. of Interspeech, pp. 2092-2096, 2015.
8. L. Wang, Bo Ren, Y. Ueda, A. Kai, S. Teraoka and F. Fukushima, "Denoising autoencoder and environment adaptation for distant-talking speech recognition with asynchronous speech recording," Proc. of APSIPA ASC 2014, pp. 1-5, Dec. 2014.
9. Z. Zhou, Z. Ding, W. Li, Z. Wu, L. Wang and Q. Liao, "Performance comparison of local directional pattern to local binary pattern in off-line signature verification system", Proc. of The 2014 7th International Congress on Image and Signal Processing, pp. 308-312, Oct. 2014.
10. Z. Zhou, Z. Ding, W. Li, Z. Wu, L. Wang and Q. Liao, "Multi-channel speech enhancement using sparse coding on local time-frequency structures", Proc. of Interspeech 2014, pp. 2824-2827, Sep. 2014.
11. Yuma Ueda, Longbiao Wang, Atsuhiko Kai, Xiong Xiao, EngSiong Chng and Haizhou Li, "Single-channel dereverberation for distant-talking speech recognition by combining denoising autoencoder and temporal structure normalization", Proc. of International Symposium on Chinese Spoken Language Processing 2014, pp. 379-383, Sep. 2014.
12. Satoshi Shiota, Longbiao Wang, Kyohei Odani, Atsuhiko Kai and Weifeng Li, "Distant-talking speech recognition using multi-channel LMS and multiple-step linear prediction", Proc. of International Symposium on Chinese Spoken Language Processing 2014, pp. 384-388, Sep. 2014.
13. Ikuya Hirano, Kong Aik Lee, Zhaofeng Zhang, Longbiao Wang and Atsuhiko Kai, "Single-sided Approach to Discriminative PLDA Training for Text-Independent Speaker Verification without Using Expanded I-vector", Proc. of International Symposium on Chinese Spoken Language Processing 2014, pp. 59-63, Sep. 2014.

14. Liyang Liu, Zhaogui Ding, Weifeng Li, Longbiao Wang and Qingmin Liao, "Speech Enhancement via Low-rank Matrix Decomposition and Image Based Masking", Proc. of International Symposium on Chinese Spoken Language Processing 2014, pp. 389-392, Sep. 2014.
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16. Y. Jiang, Y. Wu, W. Li, L. Wang and Q. Liao, "Log-domain polynomial filters for illumination-robust face recognition," Proc. of IEEE ICASSP, pp. 504-508, 2014.
17. Cong Wang, Weifeng Li, Longbiao Wang and Qingmin Liao, "An effective framework of IBP for single facial image super resolution," Proc. of 3rd International Conference on Multimedia Technology, pp. 993-1000, 2013.
18. L. Wang, K. Odani, A. Kai and W. Li, "Speech Recognition Using Blind Source Separation and Dereverberation Method for Mixed Sound of Speech and Music," Proc. of APSIPA ASC, pp. 1-4, 2013.
19. Y. Kawakami, L. Wang, and S. Nakagawa, "Speaker identification using pseudo pitch synchronized phase information in noisy environments," Proc. of APSIPA ASC, pp. 1-4, 2013.
20. M. Zhang, W. Li, L. Wang, J. Wei, Z. Wu and Q. Liao, "Sparse Coding for Sound Event Classification," Proc. of APSIPA ASC, pp. 1-5, 2013.
21. M. Zhang, W. Li, L. Wang, J. Wei, Z. Wu and Q. Liao, "Frequency-domain Dereverberation on Speech Signal using Surround Retinex," Proc. of APSIPA, pp. 1-5, 2013.
22. Zuodong Yang, Yong Wu, Yinyan Jiang, Yicong Zhou, Longbiao Wang, Weifeng Li and Qingmin Liao, "LOCAL CONSISTENCY PRESERVED COUPLED MAPPINGS FOR LOW-RESOLUTION FACE RECOGNITION," Proc. of APSIPA ASC, pp. 1-4, 2013.
23. T. Yamada, L. Wang and A. Kai, "Improvement of distant-talking speaker identification using bottleneck features of DNN," Proc. of Interspeech, pp. 3661-3664, 2013.
24. L. Wang, Z. Zhang and A. Kai, "Hands-free speaker identification based on spectral subtraction using a multi-channel least mean square approach," Proc. of IEEE ICASSP 2013, pp. 7224-7228, 2013.
25. W. Li, L. Wang, F. Zhou and Q. Liao, "Joint sparse representation based cepstral-domain dereverberation for distant-talking speech recognition," Proc. of IEEE ICASSP 2013, pp. 7117-7120, 2013.
26. L. Wang, Z. Zhang, A. Kai and Y. Kishi, "Distant-talking speaker identification using a reverberation model with various artificial room impulse responses," Proc. of APSIPA ASC 2012, Dec. 2012.
27. Z. Zhang, L. Wang and A. Kai, "Dereverberation based on Generalized Spectral Subtraction

- for Distant-talking Speaker Recognition," Proc. of APSIPA ASC 2012, Dec. 2012.
28. Y. Hirano, L. Wang, A. Kai and S. Nakagawa, "On the Use of Phase Information-based Joint Factor Analysis for Speaker Verification under Channel Mismatch Condition," Proc. of APSIPA ASC 2012, Dec. 2012.
 29. K. Odani, L. Wang and A. Kai, "Speech Recognition by Denoising and Dereverberation Based on Spectral Subtraction in a Real Noisy Reverberant Environment," Proc. of Interspeech 2012, pp. 1251-1254, Sep. 2012.
 30. Kyohei Odani, Longbiao Wang and Atsuhiko Kai, "Blind Dereverberation Based on Generalized Spectral Subtraction by Multi-channel LMS Algorithm", Proc. of APSIPA ASC 2011, Oct. 2011.
 31. Longbiao Wang, Kyohei Odani and Atsuhiko Kai, "Evaluation of Hands-free Large Vocabulary Continuous Speech Recognition by Blind Dereverberation Based on Spectral Subtraction by Multi-channel LMS Algorithm", Proc. of Text, Speech and Dialogue, pp. 131-138, Sep. 2011.
 32. J. Ema, L. Wang, A. Kai and T. Itoh, "Investigation of driving-behavior modeling for recognition of a driving situation," Proc. of APSIPA ASC 2010, pp. 161-164, Dec. 2010.
 33. Y. Jang, A. Kai and L. Wang, "Multimodal interface with N-best display including candidates of spoken word fragments," Proc. of APSIPA ASC 2010, pp. 478-481, Dec. 2010.
 34. Y. Jiang, Z. Tang and L. Wang, "Compensation approaches for distant Speaker identification under reverberant environments", Proc. of CCPR 2010, pp. 70-74, Oct. 2010.
 35. L. Wang, K. Minami, K. Yamamoto, S. Nakagawa, "Speaker identification by combining MFCC and phase information in noisy environments", Proc. of IEEE ICASSP 2010, pp. 4502-4505, March 2010.
 36. L. Wang, Y. Kishi, A. Kai, "Distant speaker recognition based on the automatic selection of reverberant environments using GMMs", Proceedings of the First CJK Joint Workshop on Pattern Recognition, pp. 954-958, Nov. 2009.
 37. L. Wang, S. Nakagawa, "Speaker identification/verification for reverberant speech using phase information", Proceedings of the 10th Western Pacific Acoustics Conference, No. 0130 (8 pages), Sep. 2009.
 38. Y. Jang, A. Kai, L. Wang, "Speech interface for isolated words based on combination of search candidates from the common parts", Proceedings of the 10th Western Pacific Acoustics Conference, No. 0261 (7 pages), Sep. 2009.
 39. L. Wang, S. Ohtsuka, S. Nakagawa, "High improvement of speaker identification and

- verification by combining MFCC and phase information", Proc. of IEEE ICASSP2009, Vol. 4, pp. 4529-4532, Apr. 2009.
40. L. Wang, S. Nakagawa, N. Kitaoka, "Blind Dereverberation Based on CMN and Spectral Subtraction by Multi-channel LMS Algorithm", Proceedings of INTERSPEECH2008, pp. 1032-1035, Sep. 2008.
 41. L. Wang, S. Nakagawa, N. Kitaoka, "Robust distant speech recognition by combining variable-term spectrum based position-dependent CMN with conventional CMN", Asian Workshop on Speech Science and Technology, pp. 63-68, March. 2008.
 42. J. Zhang, L. Wang, S. Nakagawa, "LVCSR based on context dependent syllable acoustic models", Asian Workshop on Speech Science and Technology, pp. 81-86, March. 2008.
 43. N. Alberto, L. Wang, K. Yamamoto, S. Nakagawa, "Sound source localization by distributed microphone network", 2008 RISP International Workshop on Nonlinear Circuits and Signal Processing, pp. 383-386, March 2008.
 44. L. Wang, S. Nakagawa, N. Kitaoka, "Blind dereverberation based on spectral subtraction by multi-channel LMS algorithm for distant-talking speech recognition", LangTech 2008, pp. 15-18, Feb. 2008.
 45. S. Nakagawa, K. Asakawa, L. Wang, "Speaker recognition by combining MFCC and phase information", Proceedings of INTERSPEECH 2007, pp. 2005-2008, Aug. 2007.
 46. L. Wang, N. Kitaoka, S. Nakagawa, "Robust speech recognition by combining short-term spectrum based CMN with long-term spectrum based CMN", the Japan-China Joint Conference on Acoustics (JCA2007), P-2-13 (6 pages), June 2007.
 47. L. Wang, N. Kitaoka, S. Nakagawa, "Robust Distant Speech Recognition by Combining Position-Dependent CMN with Conventional CMN", Proc. of IEEE ICASSP2007, Vol. 4, pp. 817-820, Apr. 2007.
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 49. L. Wang, N. Kitaoka, S. Nakagawa, "Robust Distant Speech Recognition Based on Position Dependent CMN Using a Novel Multiple Microphone Processing Technique", Proceedings of Interspeech2005, pp.2661-2664, 2005.
 50. L. Wang, N. Kitaoka, S. Nakagawa, "Robust Distant Speaker Recognition Based on Position Dependent Cepstral Mean Normalization", Proceedings of Interspeech2005, pp.1977-1980, Sep. 2005.
 51. L. Wang, N. Kitaoka, S. Nakagawa, "Robust distant speaker recognition based on position dependent CMN by combining speaker-specific GMM with speaker adapted syllable-based HMM", Proceedings of HSCMA2005, c-15-16, March 2005.
 52. L. Wang, N. Kitaoka, S. Nakagawa, "Robust Distant Speech Recognition based on Position Dependent CMN", Proceedings of INTERSPEECH2004, pp.2409-2052, Oct. 2004.
 53. L. Wang, N. Kitaoka, S. Nakagawa, "Distant Speech Recognition based on Position Dependent Cepstral Mean Normalization", SIP-2004, pp. 249-254, Aug. 2004.
 54. L. Wang, N. Kakutani, N. Kitaoka, S. Nakagawa, "Robust speech recognition in distant

environment based on speaker position and speaking direction detection", ICA2004, pp. 2825-2828, April 2004.

Grant (about 1,100,000 USD)

1. National "Youth one thousand talents project"
2. Tianjin "One thousand talents project"
3. Grant-in-Aid for Young Scientists (B) (2015.4–2016.8)
4. Grant-in-Aid for challenging Exploratory Research (2016.4–2016.8)
5. The Telecommunications Advancement Foundation (2014.4-2015.3)
6. Grant of Research Foundation for the Electro technology of Chubu (2014.9)
7. Fund of Hakamori Information Foundation (2014.1-2015.12)
8. JST SCOPE (2013.8-)
9. Fund of TATEISHI Science Foundation (2013.4-2015.3)
10. Grant-in-Aid for Scientific Research (C) (2013.4–2016.3)
11. Fund of MURATA Science Foundation (2012.8)
12. Japan Science and Technology Agency A-STEP (2011.12-2012.8)
13. Grant of Research Foundation for the Electro technology of Chubu (2011.9)
14. Grant-in-Aid for Young Scientists (B) (22700169) (2010.4–2013.3)
15. Grant-in-Aid for Scientific Research (C) (2009.4–2012.3)
16. Grant-in-Aid for challenging Exploratory Research (2008.4–2010.3)
17. YAZAKI Fund (2011.9)
18. MURATA Fund Grant of Hamamatsu Foundation for Science and Technology Promotion (2009.1–2010.6)
19. Grant of Research Foundation for the Electro technology of Chubu (2009.4–2010.9)

Award

1. 2016 "National youth one thousand talents"
2. 2016 "Tianjin one thousand talents"
3. 2008.5 "Chinese Government Award for Outstanding Self-financed Students Abroad"

4. 2007.5 “Excellent student Paper award of IEICE”
5. 2006.4-2008.3 Scholarship from Ministry of Education, Culture, Sports, Science and Technology, Japan
6. 2005.4-2006.3 Scholarship from International Communications Foundation

Academic Member

- IEEE
- ISCA
- APSIPA
- The Institute of Electronics, Information and Communication Engineers (IEICE)
- Acoustical Society of Japan (ASJ)