

Curriculum Vitae

INFORMAZIONI PERSONALI

Nome SABATO MARCO
Cognome SINISCALCHI
E-mail sabatomarco.siniscalchi@unipa.it

RICERCHE FINANZIATE

1. MUR PRIN 2022 - Progetti di Rilevante Interesse Nazionale - 2022-2024. Ruolo: Coordinatore Unità di Ricerca. Titolo Progetto: Speech and Handwriting Analysis to Predict Early Alzheimer's Disease – SHAPE-AD. Budget: € 315.402,00 . Identificativo: 2022X8JWJP. Partner Accademici: Università di Cassino e del LAZIO MERIDIONALE, Università degli Studi di Napoli Federico II, Università Kore di Enna
2. PNC – PNRR. Titolo: DARE - Digital Lifelong Prevention. Ruolo: Co-PI Spoke 2. Identificativo: PNC0000002. Total budget: € 124.000.000,00. Partner (Spoke 2): UNIBO, UNIPA, UKE, UNIPD, FPG, BI-REX, ARPA, LEI, AOUPCT, ROMA1, UCSC, UPMCI, MCHGVM, AUSL Romagna, ENG
3. PO FESR 2014-2020. Titolo: Realizzazione di ambienti digitali per la didattica, la ricerca e la terza missione. Ruolo: Responsabile Scientifico. Total Budget: € 3.573.870,95. Identificativo: J77G22000150002
4. RESEARCH COUNCIL OF NORWAY 2021. Titolo: SCRIBE: Machine transcription of Norwegian conversational speech– 2021-2026. Ruolo: Co-Coordinatore del WP3. Identificativo: 322964. Total budget: NOK 27 million (€ 2.65 million). Partner: Norwegian University of Science and Technology - NTNU (Norvegia), Telenor Research (Noway), Nasjonalbiblioteket (Norway)
5. MIUR PRIN 2017 - Progetti di Rilevante Interesse Nazionale - 2019-2022. Titolo Progetto: Phonetic analysis of dysarthric speech by speakers of different varieties of Italian to develop clinical tools: objective, quantitative assessment for severity measurement, early diagnosis and rehabilitation planning, taking into account sociophonetic variation. Ruolo: Coordinatore Unità di Ricerca. Identificativo: 2017JNKCZY. Partner: Università del Sannio, Università di Bari, Università Kore di Enna
6. RESEARCH COUNCIL OF NORWAY 2015. Titolo: Aulus - Atomic units for language universal representation of speech – 2015-2019. Ruolo: Co-Scientific Coordinator and Coordinator of WP4. Identificativo: 240282/O70. Total budget: NOK 12 million (€ 1.34 million). Partner: Norwegian University of Science and Technology - NTNU (Norvegia), Eurecom (Francia) e Università Kore di Enna (Italia)
7. NOKIA FOUNDATION GRANT 2015 - Characterization of Spoken Languages Using Language-Universal Speech Attributes with Applications to Automatic Accent Recognition. Project number: 201600008. Principal Investigator
8. PRIN 2009 - Progetti di Rilevante Interesse Nazionale - 2009-2013. Ruolo: Membro unità di ricerca. Identificativo: 20097THAEX002.

INCARICHI / CONSULENZE

1. Consulenza scientifica in conto terzi a favore della Boehringer Ingelheim Pharmaceuticals Inc., 900 Ridgebury Road Ridgefield, CT 06877 USA. Argomento dell'attività: Particle Picking from Digital Images and Deep Learning Methods For Automatic Particle Detection And Picking. Ruolo: Responsabile Scientifico. Sede: STMLab – Università Kore di Enna. Periodo maggio - novembre 2021
2. Consulenza scientifica in conto terzi a favore della Boehringer Ingelheim Pharmaceuticals Inc., 900 Ridgebury Road Ridgefield, CT 06877 USA. Argomento dell'attività: Machine-learning-based correlation in silico polymorph complexity evaluation. Ruolo: Responsabile Scientifico. Sede: STMLab – Università

ASSOCIAZIONI SCIENTIFICHE

ISCA - International Speech Communication Association

IEEE - Institute of Electrical and Electronics Engineers

PUBBLICAZIONE

Peer-review Journal (available on SCOPUS and/or WOS)

1. Hang Chen, Chenxi Wang, Qing Wang, Jun Du, Sabato Marco Siniscalchi, Genshun Wan, Jia Pan, Huijun Ding, *Cross-attention among spectrum, waveform and SSL representations with bidirectional knowledge distillation for speech enhancement*, Information Fusion, Volume 122, 2025

2. H. Chen, S.M. Siniscalchi et al., *HPCNet: Hybrid Pixel and Contour Network for Audio-Visual Speech Enhancement with Low-Quality Video*, in IEEE Journal of Selected Topics in Signal Processing, 2025
3. K. -W. Li, S.M. Siniscalchi. et al., *Lightweight Audio-Visual Wake Word Spotting with Diverse Acoustic Knowledge Distillation*, in IEEE Transactions on Circuits and Systems for Video Technology, 2025
4. H. Hu, S. M. Siniscalchi, C. -H. H. Yang and C. -H. Lee, *Variational Bayesian Adaptive Learning of Deep Latent Variables for Acoustic Knowledge Transfer*, in IEEE Transactions on Audio, Speech and Language Processing, vol. 33, pp. 719-730, 2025
5. M. Adiban, K. Stefanov, S. M. Siniscalchi and G. Salvi, *S-HR-VQVAE: Sequential Hierarchical Residual Learning Vector Quantized Variational Autoencoder for Video Prediction*, in IEEE Transactions on Multimedia, 2025
6. Z. Guo, J. Du, S. M. Siniscalchi, J. Pan and Q. Liu, *Controllable Conformer for Speech Enhancement and Recognition*, in IEEE Signal Processing Letters, vol. 32, pp. 156-160, 2025, doi: 10.1109/LSP.2024.3505794
7. Adiban, M., Siniscalchi, S.M., Salvi, G., *A step-by-step training method for multi generator GANs with application to anomaly detection and cybersecurity*, (2023) Neurocomputing, 537, pp. 296-308. DOI: 10.1016/j.neucom.2023.03.056. ISSN: 09252312
8. L. Mereu, B. Pecorino, M. Ferrara, S.M. Siniscalchi, G. Garraffa, M. G. D'Agate, P. Scollo, "Cumulative Sum Analysis of Learning Curve Process for Vaginal Natural Orifice Transluminal Endoscopic Surgery Hysterectomy," Journal of Minimally Invasive Gynecology, 2023 (in press)
9. Shahrehabaki, A.S., Salvi, G., Svendsen, T., Siniscalchi, S.M., *Acoustic-to-Articulatory Mapping with Joint Optimization of Deep Speech Enhancement and Articulatory Inversion Models*, (2022) IEEE/ACM Transactions on Audio Speech and Language Processing, 30, pp. 135-147. DOI: 10.1109/TASLP.2021.3133218. ISSN: 23299290
10. Conti, V., Rundo, L., Militello, C., Salerno, V.M., Vitabile, S., Siniscalchi, S.M., *A multimodal retina-iris biometric system using the levenshtein distance for spatial feature comparison*, (2021) IET Biometrics, 10 (1), pp. 44-64. DOI: 10.1049/bme2.12001. ISSN: 20474938
11. Siniscalchi, S.M., *Vector-to-Vector Regression via Distributional Loss for Speech Enhancement*, (2021) IEEE Signal Processing Letters, 28, art. no. 9317794, pp. 254-258. DOI: 10.1109/LSP.2021.3050386. ISSN: 10709908
12. Hussain, T., Siniscalchi, S.M., Wang, H.-L.S., Tsao, Y., Salerno, V.M., Liao, W.-H., *Ensemble hierarchical extreme learning machine for speech dereverberation*, (2020) IEEE Transactions on Cognitive and Developmental Systems, 12 (4), art. no. 8906014, pp. 744-758. DOI: 10.1109/TCDS.2019.2953620. ISSN: 23798920
13. Qi, J., Du, J., Siniscalchi, S.M., Ma, X., Lee, C.-H., *On Mean Absolute Error for Deep Neural Network Based Vector-to-Vector Regression*, (2020) IEEE Signal Processing Letters, 27, art. no. 9167435, pp. 1485-1489. DOI: 10.1109/LSP.2020.3016837. ISSN: 10709908
14. Qi, J., Du, J., Siniscalchi, S.M., Ma, X., Lee, C.-H., *Analyzing Upper Bounds on Mean Absolute Errors for Deep Neural Network-Based Vector-to-Vector Regression*, (2020) IEEE Transactions on Signal Processing, 68, art. no. 9089350, pp. 3411-3422. DOI: 10.1109/TSP.2020.2993164. ISSN: 1053587X
15. Kukanov, I., Trong, T.N., Hautamäki, V., Siniscalchi, S.M., Salerno, V.M., Lee, K.A., *Maximal figure-of-merit framework to detect multi-label phonetic features for spoken language recognition*, (2020) IEEE/ACM Transactions on Audio Speech and Language Processing, 28, art. no. 2964953, pp. 682-695. DOI: 10.1109/TASLP.2020.2964953. ISSN: 23299290
16. Qi, J., Du, J., Marco Siniscalchi, S., Lee, C.-H., *A theory on deep neural network based vector-to-vector*

- regression with an illustration of its expressive power in speech enhancement*, (2019) IEEE/ACM Transactions on Audio Speech and Language Processing, 27 (12), art. no. 2935891, pp. 1932-1943. DOI: 10.1109/TASLP.2019.2935891. ISSN: 23299290
17. Li, W., Chen, N.F., Siniscalchi, S.M., Lee, C.-H., *Improving mispronunciation detection of Mandarin tones for non-native learners with soft-target tone labels and BLSTM-Based deep tone models*, (2019) IEEE/ACM Transactions on Audio Speech and Language Processing, 27 (12), art. no. 3370742, pp. 2012-2024. DOI: 10.1109/TASLP.2019.2936755. ISSN: 23299290
 18. Lin, J., Li, W., Gao, Y., Xie, Y., Chen, N.F., Siniscalchi, S.M., Zhang, J., Lee, C.-H., *Improving Mandarin Tone Recognition Based on DNN by Combining Acoustic and Articulatory Features Using Extended Recognition Networks*, (2018) Journal of Signal Processing Systems, 90 (7), pp. 1077-1087. DOI: 10.1007/s11265-018-1334-2. ISSN: 19398018
 19. Wu, B., Yang, M., Li, K., Huang, Z., Siniscalchi, S.M., Wang, T., Lee, C.-H., *A reverberation-time-aware DNN approach leveraging spatial information for microphone array dereverberation*, (2017) Eurasip Journal on Advances in Signal Processing, 2017 (1), art. no. 81. DOI: 10.1186/s13634-017-0516-6. ISSN: 16876172
 20. Wu, B., Li, K., Ge, F., Huang, Z., Yang, M., Siniscalchi, S.M., Lee, C.-H., *An end-to-end deep learning approach to simultaneous speech dereverberation and acoustic modeling for robust speech recognition*, (2017) IEEE Journal on Selected Topics in Signal Processing, 11 (8), art. no. 8051278, pp. 1289-1300. DOI: 10.1109/JSTSP.2017.2756439. ISSN: 19324553
 21. Huang, Z., Siniscalchi, S.M., Lee, C.-H., *Hierarchical Bayesian combination of plug-in maximum a posteriori decoders in deep neural networks-based speech recognition and speaker adaptation*, (2017) Pattern Recognition Letters, 98, pp. 1-7. DOI: 10.1016/j.patrec.2017.08.001. ISSN: 01678655
 22. Siniscalchi, S.M., Salerno, V.M., *Adaptation to new microphones using artificial neural networks with trainable activation functions*, (2017) IEEE Transactions on Neural Networks and Learning Systems, 28 (8), art. no. 7452664, pp. 1959-1965. DOI: 10.1109/TNNLS.2016.2550532. ISSN: 2162237X
 23. Hussain, T., Siniscalchi, S.M., Lee, C.-C., Wang, S.-S., Tsao, Y., Liao, W.-H., *Experimental study on extreme learning machine applications for speech enhancement*, (2017) IEEE Access, 5, pp. 25542-25554. DOI: 10.1109/ACCESS.2017.2766675. ISSN: 21693536
 24. Huang, Z., Siniscalchi, S.M., Lee, C.-H., *Bayesian unsupervised batch and online speaker adaptation of activation function parameters in deep models for automatic speech recognition*, (2017) IEEE/ACM Transactions on Audio Speech and Language Processing, 25 (1), pp. 60-71. DOI: 10.1109/TASLP.2016.2621669. ISSN: 23299290
 25. Huang, Z., Siniscalchi, S.M., Lee, C.-H., *A unified approach to transfer learning of deep neural networks with applications to speaker adaptation in automatic speech recognition*, (2016) Neurocomputing, 218, pp. 448-459. DOI: 10.1016/j.neucom.2016.09.018. ISSN: 09252312
 26. Behravan, H., Hautamaki, V., Siniscalchi, S.M., Kinnunen, T., Lee, C.-H., *I-Vector Modeling of Speech Attributes for Automatic Foreign Accent Recognition*, (2016) IEEE/ACM Transactions on Audio Speech and Language Processing, 24 (1), pp. 29-41. DOI: 10.1109/TASLP.2015.2489558. ISSN: 23299290
 27. Siniscalchi, S.M., Svendsen, T., Lee, C.-H., *An artificial neural network approach to automatic speech processing*, (2014) Neurocomputing, 140, pp. 326-338. DOI: 10.1016/j.neucom.2014.03.005. ISSN: 09252312
 28. Barone, R.E., Giuffrè, T., Siniscalchi, S.M., Morgano, M.A., Tesoriere, G., *Architecture for parking management in smart cities*, (2014) IET Intelligent Transport Systems, 8 (5), pp. 445-452. DOI: 10.1049/iet-its.2013.0045. ISSN: 1751956X

29. Siniscalchi, S.M., Li, J., Lee, C.-H., *Model-based margin estimation for hidden Markov model learning and generalization*, (2013) IET Signal Processing, 7 (8), pp. 704-709. DOI: 10.1049/iet-spr.2013.0036. ISSN: 17519675

30. Siniscalchi, S.M., Li, J., Lee, C.-H., *Hermitian polynomial for speaker adaptation of connectionist speech recognition systems*, (2013) IEEE Transactions on Audio, Speech and Language Processing, 21 (10), art. no. 6544616, pp. 2152-2161. DOI: 10.1109/TASL.2013.2270370. ISSN: 15587916

31. Siniscalchi, S.M., Yu, D., Deng, L., Lee, C.-H., *Speech recognition using long-span temporal patterns in a deep network model*, (2013) IEEE Signal Processing Letters, 20 (3), art. no. 6403509, pp. 201-204. DOI: 10.1109/LSP.2013.2237901. ISSN: 10709908

32. Siniscalchi, S.M., Svendsen, T., Lee, C.-H., *A bottom-up modular search approach to large vocabulary continuous speech recognition*, (2013) IEEE Transactions on Audio, Speech and Language Processing, 21 (4), art. no. 6384711, pp. 786-797. DOI: 10.1109/TASL.2012.2234115. ISSN: 15587916

33. Siniscalchi, S.M., Yu, D., Deng, L., Lee, C.-H., *Exploiting deep neural networks for detection-based speech recognition*, (2013) Neurocomputing, 106, pp. 148-157. DOI: 10.1016/j.neucom.2012.11.008. ISSN: 09252312

34. Lee, C.-H., Siniscalchi, S.M., *An information-extraction approach to speech processing: Analysis, detection, verification, and recognition*, (2013) Proceedings of the IEEE, 101 (5), art. no. 6457407, pp. 1089-1115. DOI: 10.1109/JPROC.2013.2238591. ISSN: 00189219

35. Siniscalchi, S.M., Reed, J., Svendsen, T., Lee, C.-H., *Universal attribute characterization of spoken languages for automatic spoken language recognition*, (2013) Computer Speech and Language, 27 (1), pp. 209-227. DOI: 10.1016/j.csl.2012.05.001. ISSN: 08852308

36. Siniscalchi, S.M., *Combining speech attribute detection and penalized logistic regression for phoneme recognition*, (2012) Neurocomputing, 93, pp. 10-18. DOI: 10.1016/j.neucom.2012.02.037. ISSN: 09252312

37. Siniscalchi, S.M., Lyu, D.-C., Svendsen, T., Lee, C.-H., *Experiments on cross-language attribute detection and phone recognition with minimal target-specific training data*, (2012) IEEE Transactions on Audio, Speech and Language Processing, 20 (3), art. no. 6016213, pp. 875-887. DOI: 10.1109/TASL.2011.2167610. ISSN: 15587916

38. Birkenes, O., Matsui, T., Tanabe, K., Siniscalchi, S.M., Myrvoll, T.A., Johnsen, M.H., *Penalized logistic regression with HMM log-likelihood regressors for speech recognition*, (2010) IEEE Transactions on Audio, Speech and Language Processing, 18 (6), art. no. 5299048, pp. 1440-1454. DOI: 10.1109/TASL.2009.2035151. ISSN: 15587916

39. Siniscalchi, S.M., Lee, C.-H., *A study on integrating acoustic-phonetic information into lattice rescoring for automatic speech recognition*, (2009) Speech Communication, 51 (11), pp. 1139-1153. DOI: 10.1016/j.specom.2009.05.004. ISSN: 01676393

International Peer-review Conferences (Selected)

1. A. Hsieh, C.H. H. Yang, S. M. SINISCALCHI, P.-Y. Chen, and Y. Tsao "Inference and Denoise: Causal Inference-based Neural Speech Enhancement," submitted to IEEE MLSP

2. H. Yen, P.-J. Fun, C.H. H. Yang, H. Hu, S. M. SINISCALCHI, P.-Y. Chen, and Y. Tsao, "Neural Model

Reprogramming with Similarity Based Mapping for Low-Resource Spoken Command Recognition" INTERSPEECH 2023 (accepted)

3. S. Sarni, S. Cumani, S. M. SINISCALCHI, and A. Bottino, "Description and analysis of the KPT system for NIST Language Recognition Evaluation 2022" INTERSPEECH 2023 (accepted)

4. P.-J. Ku, C.-H. H. Yang, S. M. SINISCALCHI, and C.-H. Lee, "A Multi-dimensional Deep Structured State Space Approach to Speech Enhancement using Small-footprint Models" INTERSPEECH 2023 (accepted)

5. C.-W. Ho, C.-H. H. Yang, and S. M. SINISCALCHI, "Differentially Private Adapters for Parameter Efficient Acoustic Modeling" INTERSPEECH 2023 (accepted)

6. Yang, C.-H.H., Chen, I.-F., Stolcke, A., Siniscalchi, S.M., LEE, C.-H., *An Experimental Study on Private Aggregation of Teacher Ensemble Learning for End-to-End Speech Recognition*, (2023) 2022 IEEE Spoken Language Technology Workshop, SLT 2022, pp. 1074-1080. DOI: 10.1109/SLT54892.2023.10023326. ISBN: 9798350396904

7. Yang, C.-H.H., Qi, J., Siniscalchi, S.M., Lee, C.-H., *An Ensemble Teacher-Student Learning Approach with Poisson Sub-sampling to Differential Privacy Preserving Speech Recognition*, (2022) 2022 13th International Symposium on Chinese Spoken Language Processing, ISCSLP 2022, pp. 1-5. DOI: 10.1109/ISCSLP57327.2022.10038060. ISBN: 9798350397963

8. Wang, Q., Du, J., Zheng, S., Li, Y., Wang, Y., Wu, Y., Hu, H., Yang, C.-H.H., Siniscalchi, S.M., Wang, Y., Lee, C.-H., *A Study on Joint Modeling and Data Augmentation of Multi-Modalities for Audio-Visual Scene Classification*, (2022) 2022 13th International Symposium on Chinese Spoken Language Processing, ISCSLP 2022, pp. 453-457. DOI: 10.1109/ISCSLP57327.2022.10038206. ISBN: 9798350397963

9. Zhou, H., Du, J., Zou, G., Nian, Z., Lee, C.-H., Siniscalchi, S.M., Watanabe, S., Scharenborg, O., Chen, J., Xiong, S., Gao, J.-Q., *Audio-Visual Wake Word Spotting in MISP2021 Challenge: Dataset Release and Deep Analysis*, (2022) Proceedings of the Annual Conference of the International Speech Communication Association, INTERSPEECH, 2022-September, pp. 1111-1115. DOI: 10.21437/Interspeech.2022-10650. ISSN: 2308457X

10. Chen, H., Du, J., Dai, Y., Lee, C.-H., Siniscalchi, S.M., Watanabe, S., Scharenborg, O., Chen, J., Yin, B.-C., Pan, J., *Audio-Visual Speech Recognition in MISP2021 Challenge: Dataset Release and Deep Analysis*, (2022) Proceedings of the Annual Conference of the International Speech Communication Association, INTERSPEECH, 2022-September, pp. 1766-1770. DOI: 10.21437/Interspeech.2022-10483. ISSN: 2308457X

11. Hu, H., Siniscalchi, S.M., Yang, C.-H.H., Lee, C.-H., *A Variational Bayesian Approach To Learning Latent Variables For Acoustic Knowledge Transfer*, (2022) ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing - Proceedings, 2022-May, pp. 1041-1045. DOI: 10.1109/ICASSP43922.2022.9746076. ISSN: 15206149 ISBN: 9781665405409

12. Chen, H., Zhou, H., Du, J., Lee, C.-H., Chen, J., Watanabe, S., Siniscalchi, S.M., Scharenborg, O., Liu, D.-Y., Yin, B.-C., Pan, J., Gao, J.-Q., Liu, C., *The First Multimodal Information Based Speech Processing (MISP) Challenge: Data, Tasks, Baselines And Results*, (2022) ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing - Proceedings, 2022-May, pp. 9266-9270. DOI: 10.1109/ICASSP43922.2022.9746683. ISSN: 15206149. ISBN: 9781665405409

13. Yang, C.-H.H., Siniscalchi, S.M., Lee, C.-H., *PATE-AAE: Incorporating adversarial autoencoder into private aggregation of teacher ensembles for spoken command classification*, (2021) Proceedings of the Annual Conference of the International Speech Communication Association, INTERSPEECH, 3, pp. 1743-1747. DOI: 10.21437/Interspeech.2021-640. ISSN: 2308457X. ISBN: 9781713836902

14. Shahrehabaki, A.S., Siniscalchi, S.M., Svendsen, T., *Raw speech-to-articulatory inversion by temporal filtering and decimation*, (2021) Proceedings of the Annual Conference of the International Speech Communication Association, INTERSPEECH, 4, pp. 3106-3110. DOI: 10.21437/Interspeech.2021-1429. ISSN: 2308457X. ISBN:

15. Shahrehabaki, A.S., Olfati, N., Imran, A.S., Johnsen, M.H., Siniscalchi, S.M., Svendsen, T., *A Two-Stage Deep Modeling Approach to Articulatory Inversion*, (2021) ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing, 2021-June, pp. 6453-6457. DOI: 10.1109/ICASSP39728.2021.9413742. ISSN: 15206149

16. Hu, H., Yang, C.-H.H., Xia, X., Bai, X., Tang, X., Wang, Y., Niu, S., Chai, L., Li, J., Zhu, H., Bao, F., Zhao, Y., Siniscalchi, S.M., Wang, Y., Du, J., Lee, C.-H., *A two-stage approach to device-robust acoustic scene classification*, (2021) ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing - Proceedings, 2021-June, pp. 845-849. DOI: 10.1109/ICASSP39728.2021.9414835. ISSN: 15206149

17. Yang, C.-H.H., Qi, J., Chen, S.Y.-C., Chen, P.-Y., Siniscalchi, S.M., Ma, X., Lee, C.-H., *Decentralizing feature extraction with quantum convolutional neural network for automatic speech recognition*, (2021) ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing - Proceedings, 2021-June, pp. 6523-6527. DOI: 10.1109/ICASSP39728.2021.9413453. ISSN: 15206149

18. Shahrehabaki, A.S., Siniscalchi, S.M., Salvi, G., Svendsen, T., *A DNN based speech enhancement approach to noise robust acoustic-to-articulatory inversion*, (2021) Proceedings - IEEE International Symposium on Circuits and Systems, 2021-May, art. no. 9401290. DOI: 10.1109/ISCAS51556.2021.9401290. ISSN: 02714310. ISBN: 9781728192017

19. Wang, S., Li, W., Siniscalchi, S. M., Lee, C.-H., *A cross-task transfer learning approach to adapting deep speech enhancement models to unseen background noise using paired senone classifiers*, (2020) ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing, 2020-May, art. no. 9054543, pp. 6219-6223. DOI: 10.1109/ICASSP40776.2020.9054543. ISSN: 15206149. ISBN: 9781509066315

20. Qi, J., Hu, H., Wang, Y., Yang, C.-H.H., Marco Siniscalchi, S., Lee, C.-H., *Tensor-To-Vector Regression for Multi-Channel Speech Enhancement Based on Tensor-Train Network*, (2020) ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing, 2020-May, art. no. 9052938, pp. 7504-7508. DOI: 10.1109/ICASSP40776.2020.9052938. ISSN: 15206149. ISBN: 9781509066315

21. Qi, J., Ma, X., Lee, C.-H., Du, J., Siniscalchi, S.M., *Performance Analysis for Tensor-Train Decomposition to Deep Neural Network Based Vector-to-Vector Regression* (2020) 2020 54th Annual Conference on Information Sciences and Systems, CISS 2020, art. no. 9086251. DOI: 10.1109/CISS48834.2020.1570617364. ISBN: 9781728140841

22. Shahrehabaki, A.S., Olfati, N., Siniscalchi, S.M., Salvi, G., Svendsen, T., *Transfer learning of articulatory information through phone information*, (2020) Proceedings of the Annual Conference of the International Speech Communication Association, INTERSPEECH, 2020-October, pp. 2877-2881. DOI: 10.21437/Interspeech.2020-1139. ISSN: 2308457X

23. Shahrehabaki, A.S., Siniscalchi, S.M., Salvi, G., Svendsen, T., *Sequence-to-sequence articulatory inversion through time convolution of sub-band frequency signals*, (2020) Proceedings of the Annual Conference of the International Speech Communication Association, INTERSPEECH, 2020-October, pp. 2882-2886. DOI: 10.21437/Interspeech.2020-1140. ISSN: 2308457X

24. Hu, H., Siniscalchi, S.M., Wang, Y., Lee, C.-H., *Relational teacher student learning with neural label embedding for device adaptation in acoustic scene classification*, (2020) Proceedings of the Annual Conference of the International Speech Communication Association, INTERSPEECH, 2020-October, pp. 1196-1200. DOI: 10.21437/Interspeech.2020-2038. ISSN: 2308457X

25. Hu, H., Siniscalchi, S.M., Wang, Y., Bai, X., Du, J., Lee, C.-H., *An acoustic segment model based segment unit selection approach to acoustic scene classification with partial utterances*, (2020) Proceedings of the Annual Conference of the International Speech Communication Association, INTERSPEECH, 2020-October, pp. 1201-1205. DOI: 10.21437/Interspeech.2020-2044. ISSN: 2308457X

26. Qi, J., Hu, H., Wang, Y., Yang, C.-H.H., Siniscalchi, S.M., Lee, C.-H., *Exploring deep hybrid tensor-to-vector network architectures for regression based speech enhancement*, (2020) Proceedings of the Annual Conference of the International Speech Communication Association, INTERSPEECH, 2020-October, pp. 76-80. DOI: 10.21437/Interspeech.2020-1900. ISSN: 2308457X
27. Hussain, T., Tsao, Y., Wang, H.-M., Wang, J.-C., Siniscalchi, S.M., Liao, W.-H., *Compressed multimodal hierarchical extreme learning machine for speech enhancement*, (2019) 2019 Asia-Pacific Signal and Information Processing Association Annual Summit and Conference, APSIPA ASC 2019, art. no. 9023012, pp. 678-683. DOI: 10.1109/APSIPAASC47483.2019.9023012. ISBN: 9781728132488
28. Hussain, T., Tsao, Y., Wang, H.-M., Wang, J.-C., Siniscalchi, S.M., Liao, W.-H., *Audio-visual speech enhancement using hierarchical extreme learning machine*, (2019) European Signal Processing Conference, 2019-September, . DOI: 10.23919/EUSIPCO.2019.8903105. ISSN: 22195491. ISBN: 9789082797039
29. Li, W., Wang, S., Lei, M., Siniscalchi, S.M., Lee, C.-H., *Improving Audio-visual Speech Recognition Performance with Cross-modal Student-teacher Training*, (2019) ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing, 2019-May, art. no. 8682868, pp. 6560-6564. DOI: 10.1109/ICASSP.2019.8682868. ISSN: 15206149. ISBN: 9781479981311
30. Huang, Z., Zhuang, X., Liu, D., Xiao, X., Zhang, Y., Siniscalchi, S.M., *Exploring Retraining-free Speech Recognition for Intra-sentential Code-switching*, (2019) ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing, 2019-May, art. no. 8682478, pp. 6066-6070. DOI: 10.1109/ICASSP.2019.8682478. ISSN: 15206149. ISBN: 9781479981311
31. Shahrehabaki, A.S., Olfati, N., Imran, A.S., Siniscalchi, S.M., Svendsen, T., *A phonetic-level analysis of different input features for articulatory inversion*, (2019) Proceedings of the Annual Conference of the International Speech Communication Association, INTERSPEECH, 2019-September, pp. 3775-3779. DOI: 10.21437/Interspeech.2019-2526. ISSN: 2308457X
32. Li, W., Chen, N.F., Siniscalchi, S.M., Lee, C.-H., *Improving Mandarin Tone Mispronunciation Detection for Non-Native Learners with Soft-Target Tone Labels and BLSTM-Based Deep Models*, (2018) ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing - Proceedings, 2018-April, art. no. 8461629, pp. 6249-6253. DOI: 10.1109/ICASSP.2018.8461629. ISSN: 15206149. ISBN: 9781538646588
33. Wang, S., Li, K., Huang, Z., Siniscalchi, S.M., Lee, C.-H., *A transfer learning and progressive stacking approach to reducing deep model sizes with an application to speech enhancement*, (2017) ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing, art. no. 7953223, pp. 5575-5579. DOI: 10.1109/ICASSP.2017.7953223. ISSN: 15206149. ISBN: 9781509041176
34. Wu, B., Li, K., Huang, Z., Siniscalchi, S.M., Yang, M., Lee, C.-H., *A unified deep modeling approach to simultaneous speech dereverberation and recognition for the reverb challenge*, (2017) 2017 Hands-Free Speech Communications and Microphone Arrays, HSCMA 2017, art. no. 7895557, pp. 36-40. DOI: 10.1109/HSCMA.2017.7895557. ISBN: 9781509059256
35. Kukanov, I., Hautamäki, V., Siniscalchi, S.M., Li, K., *Deep learning with maximal figure-of-merit cost to advance multi-label speech attribute detection*, (2017) 2016 IEEE Workshop on Spoken Language Technology, SLT 2016 - Proceedings, art. no. 7846308, pp. 489-495. DOI: 10.1109/SLT.2016.7846308. ISBN: 9781509049035
36. Li, W., Siniscalchi, S.M., Chen, N.F., Lee, C.-H., *Using tone-based extended recognition network to detect non-native Mandarin tone mispronunciations*, (2017) 2016 Asia-Pacific Signal and Information Processing Association Annual Summit and Conference, APSIPA 2016, art. no. 7820701. DOI: 10.1109/APSIPA.2016.7820701. ISBN: 9789881476821
37. Huang, Z., Siniscalchi, S.M., Chen, I.-F., Lee, C.-H., *Towards a direct Bayesian adaptation framework for deep models*

38. (2017) 2016 Asia-Pacific Signal and Information Processing Association Annual Summit and Conference, APSIPA 2016, art. no. 7820894. DOI: 10.1109/APSIPA.2016.7820894. ISBN: 9789881476821
39. Ge, F., Li, K., Wu, B., Siniscalchi, S.M., Yan, Y., Lee, C.-H., *Joint training of multi-channel-condition dereverberation and acoustic modeling of microphone array speech for robust distant speech recognition*, (2017) Proceedings of the Annual Conference of the International Speech Communication Association, INTERSPEECH, 2017-August, pp. 3847-3851. DOI: 10.21437/Interspeech.2017-579. ISSN: 2308457X
40. Li, W., Chen, N.F., Siniscalchi, S.M., Lee, C.-H., *Improving mispronunciation detection for non-native learners with multisource information and LSTM-based deep models*, (2017) Proceedings of the Annual Conference of the International Speech Communication Association, INTERSPEECH, 2017-August, pp. 2759-2763. DOI: 10.21437/Interspeech.2017-464. ISSN: 2308457X
41. Li, W., Siniscalchi, S.M., Chen, N.F., Lee, C.-H., *Improving non-native mispronunciation detection and enriching diagnostic feedback with DNN-based speech attribute modeling*, (2016) ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing, 2016-May, art. no. 7472856, pp. 6135-6139. DOI: 10.1109/ICASSP.2016.7472856. ISSN: 15206149. ISBN: 9781479999880
42. Li, W., Li, K., Siniscalchi, S.M., Chen, N.F., Lee, C.-H., *Detecting mispronunciations of L2 learners and providing corrective feedback using knowledge-guided and data-driven decision trees*, (2016) Proceedings of the Annual Conference of the International Speech Communication Association, INTERSPEECH, 08-12-September-2016, pp. 3127-3131. DOI: 10.21437/Interspeech.2016-517. ISSN: 2308457X
43. Huang, Z., Li, J., Siniscalchi, S.M., Chen, I.-F., Wu, J., Lee, C.-H., *Rapid adaptation for deep neural networks through multi-task learning*, (2015) Proceedings of the Annual Conference of the International Speech Communication Association, INTERSPEECH, 2015-January, pp. 3625-3629. ISSN: 2308457X
44. Huang, Z., Siniscalchi, S.M., Chen, I.-F., Li, J., Wu, J., Lee, C.-H. *Maximum a posteriori adaptation of network parameters in deep models*, (2015) Proceedings of the Annual Conference of the International Speech Communication Association, INTERSPEECH, 2015-January, pp. 1076-1080. ISSN: 2308457X
45. Hautamäki, V., Siniscalchi, S.M., Behravan, H., Salerno, V.M., Kukanov, I., *Boosting universal speech attributes classification with deep neural network for foreign accent characterization*, (2015) Proceedings of the Annual Conference of the International Speech Communication Association, INTERSPEECH, 2015-January, pp. 408-412. ISSN: 2308457X
46. Huang, Z., Li, J., Siniscalchi, S.M., Chen, I.-F., Weng, C., Lee, C.-H., *Feature space maximum a posteriori linear regression for adaptation of deep neural networks*, (2014) Proceedings of the Annual Conference of the International Speech Communication Association, INTERSPEECH, pp. 2992-2996. ISSN: 2308457X
47. Behravan, H., Hautamäki, V., Siniscalchi, S.M., Khoury, E., Kurki, T., Kinnunen, T., Lee, C.-H., *Dialect levelling in Finnish: A universal speech attribute approach*, (2014) Proceedings of the Annual Conference of the International Speech Communication Association, INTERSPEECH, pp. 2165-2169. ISSN: 2308457X
48. Chen, I.-F., Siniscalchi, S.M., Lee, C.-H., *Attribute based lattice rescoring in spontaneous speech recognition*, (2014) ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing - Proceedings, art. no. 6854216, pp. 3325-3329. DOI: 10.1109/ICASSP.2014.6854216. ISSN: 15206149. ISBN: 9781479928927
49. Behravan, H., Hautamäki, V., Siniscalchi, S.M., Kinnunen, T., Lee, C.-H., *Introducing attribute features to foreign accent recognition*, (2014) ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing - Proceedings, art. no. 6854621, pp. 5332-5336. DOI: 10.1109/ICASSP.2014.6854621. ISSN: 15206149. ISBN: 9781479928927
50. Chen, I.-F., Siniscalchi, S.M., Moon, S., Shin, D., Koo, M.-W., Chung, M., Lee, C.-H., *An experimental study on structural-MAP approaches to implementing very large vocabulary speech recognition systems for real-world tasks*

51. (2013) 2013 Asia-Pacific Signal and Information Processing Association Annual Summit and Conference,

52. Barone, R.E., Salerno, V., Siniscalchi, S.M., *An introductory study on deep neural networks for high resolution aerial images*, (2013) AIP Conference Proceedings, 1558, pp. 1232-1236. DOI: 10.1063/1.4825733. ISSN: 0094243X. ISBN: 9780735411845

53. Chiang, C.-Y., Siniscalchi, S.M., Chen, S.-H., Lee, C.-H., *Knowledge integration for improving performance in LVCSR*, (2013) Proceedings of the Annual Conference of the International Speech Communication Association, INTERSPEECH, pp. 1786-1790. ISSN: 2308457X

54. Siniscalchi, S.M., Li, J., Lee, C.-H., *Hermitian-based Hidden activation functions for adaptation of hybrid HMM/ANN models*, (2012) 13th Annual Conference of the International Speech Communication Association 2012, INTERSPEECH 2012, 3, pp. 2589-2592. ISBN: 9781622767595

55. Byun, B., Kim, I., Siniscalchi, S.M., Lee, C.-H., *Consumer-level multimedia event detection through unsupervised audio signal modeling*, (2012) 13th Annual Conference of the International Speech Communication Association 2012, INTERSPEECH 2012, 3, pp. 2079-2082. ISBN: 9781622767595

56. Leow, S.J., Lau, T.S., Goh, A., Peh, H.M., Ng, T.K., Siniscalchi, S.M., Lee, C.-H., *A new confidence measure combining Hidden Markov models and Artificial Neural Networks of phonemes for effective keyword spotting*, (2012) 2012 8th International Symposium on Chinese Spoken Language Processing, ISCSLP 2012, art. no. 6423455, pp. 112-116. DOI: 10.1109/ISCSLP.2012.6423455. ISBN: 9781467325059

57. Chiang, C.-Y., Siniscalchi, S.M., Wang, Y.-R., Chen, S.-H., Lee, C.-H., *A study on cross-language knowledge integration in Mandarin LVCSR*. (2012) 2012 8th International Symposium on Chinese Spoken Language Processing, ISCSLP 2012, art. no. 6423528, pp. 315-319. DOI: 10.1109/ISCSLP.2012.6423528. ISBN: 9781467325059

58. Yu, D., Siniscalchi, S.M., Deng, L., Lee, C.-H., *Boosting attribute and phone estimation accuracies with deep neural networks for detection-based speech recognition*, (2012) ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing - Proceedings, art. no. 6288837, pp. 4169-4172. DOI: 10.1109/ICASSP.2012.6288837. ISSN: 15206149. ISBN: 9781467300469

59. Siniscalchi, S.M., Svendsen, T., Lee, C.-H., *A bottom-up stepwise knowledge-integration approach to large vocabulary continuous speech recognition using weighted finite state machines*, (2011) Proceedings of the Annual Conference of the International Speech Communication Association, INTERSPEECH, pp. 901-904. ISSN: 19909772

60. Huang, S., Karakos, D., Coppersmith, G.A., Church, K.W., Siniscalchi, S.M., *Bootstrapping a spoken language identification system using unsupervised integrated sensing and processing decision trees*, (2011) 2011 IEEE Workshop on Automatic Speech Recognition and Understanding, ASRU 2011, Proceedings, art. no. 6163955, pp. 342-347. DOI: 10.1109/ASRU.2011.6163955. ISBN: 9781467303675

61. Siniscalchi, S.M., Svendsen, T., Lee, C.-H., *A survey on recent progress in the ASAT/SIRKUS paradigm*, (2010) 2010 7th International Symposium on Chinese Spoken Language Processing, ISCSLP 2010 - Proceedings, art. no. 5684480, pp. 465-470. DOI: 10.1109/ISCSLP.2010.5684480. ISBN: 9781424462469

62. Siniscalchi, S.M., Reed, J., Svendsen, T., Lee, C.-H., *Exploiting context-dependency and acoustic resolution of universal speech attribute models in spoken language recognition*, (2010) Proceedings of the 11th Annual Conference of the International Speech Communication Association, INTERSPEECH 2010, pp. 2718-2721.

63. Siniscalchi, S.M., Svendsen, T., Sorbello, F., Lee, C.-H., *Experimental studies on continuous speech recognition using neural architectures with "adaptive" hidden activation functions*, (2010) ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing - Proceedings, art. no. 5495120, pp. 4882-4885. DOI: 10.1109/ICASSP.2010.5495120. ISSN: 15206149. ISBN: 9781424442966

64. Reed, J.T., Ueda, Y., Siniscalchi, S., Uchiyama, Y., Sagayama, S., Lee, C.-H., *Minimum classification error training to improve isolated chord recognition*, (2009) Proceedings of the 10th International Society for Music Information Retrieval Conference, ISMIR 2009, pp. 609-614. ISBN: 9780981353708
65. Siniscalchi, S.M., Reed, J., Svendsen, T., Lee, C.-H., *Exploring universal attribute characterization of spoken languages for spoken language recognition*, (2009) Proceedings of the Annual Conference of the International Speech Communication Association, INTERSPEECH, pp. 168-171. ISSN: 19909772
66. Siniscalchi, S.M., Svendsen, T., Lee, C.-H., *A phonetic feature based lattice rescoring approach to LVCSR*, (2009) ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing - Proceedings, art. no. 4960471, pp. 3865-3868. DOI: 10.1109/ICASSP.2009.4960471. ISSN: 15206149. ISBN: 9781424423545
67. Lyu, D.-C., Siniscalchi, S.M., Kim, T.-Y., Lee, C.-H., *Continuous phone recognition without target language training data* (2008) Proceedings of the Annual Conference of the International Speech Communication Association, INTERSPEECH, pp. 2687-2690. ISSN: 19909772
68. Siniscalchi, S.M., Svendsen, T., Lee, C.-H., *A penalized logistic regression approach to detection based phone classification*, (2008) Proceedings of the Annual Conference of the International Speech Communication Association, INTERSPEECH, pp. 2390-2393. ISSN: 19909772
69. Siniscalchi, S.M., Svendsen, T., Lee, C.-H., *Toward a detector-based universal phone recognizer*, (2008) ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing, art. no. 4518596, pp. 4261-4264. DOI: 10.1109/ICASSP.2008.4518596. ISSN: 15206149. ISBN: 1424414849; 9781424414840
70. Bromberg, I., Fu, Q., Hou, J., Li, J., Ma, C., Matthews, B., Moreno-Daniel, A., Morris, J., Siniscalchi, S.M., Tsao, Y., Wang, Y., *Detection-based ASR in the automatic speech attribute transcription project*, (2007) International Speech Communication Association - 8th Annual Conference of the International Speech Communication Association, Interspeech 2007, 3, pp. 1633-1636. ISBN: 9781605603162
71. Li, J., Siniscalchi, S.M., Lee, C.-H., *Approximate test risk minimization through soft margin estimation*, (2007) ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing, 4, art. no. 4218185, pp. IV653-IV656. DOI: 10.1109/ICASSP.2007.366997. ISSN: 15206149. ISBN: 1424407281; 9781424407286
72. Siniscalchi, S.M., Schwarz, P., Lee, C.-H., *High-accuracy phone recognition by combining high-performance lattice generation and knowledge based rescoring*, (2007) ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing - Proceedings, 4, art. no. 4218239, pp. IV869-IV872. DOI: 10.1109/ICASSP.2007.367208. ISSN: 15206149. ISBN: 1424407281; 9781424407286
73. Siniscalchi, S.M., Svendsen, T., Lee, C.-H., *Towards bottom-up continuous phone recognition*, (2007) 2007 IEEE Workshop on Automatic Speech Recognition and Understanding, ASRU 2007, Proceedings, art. no. 4430174, pp. 566-569. DOI: 10.1109/asru.2007.4430174
74. Krishnan, V., Siniscalchi, S.M., Anderson, D.V., Clements, M.A., *Noise robust Aurora-2 speech recognition employing a codebook-constrained Kalman filter preprocessor*, (2006) ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing - Proceedings, 1, art. no. 1660137, pp. I781-I784. ISSN: 15206149. ISBN: 142440469X; 9781424404698
75. Siniscalchi, S.M., Clements, M.A., Gentile, A., Vassallo, G., Sorbello, F., *A study of perceptron mapping capability to design speech event detectors*, (2006) ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing, 5, art. no. 1661398, pp. V805-V808. ISSN: 15206149. ISBN: 142440469X; 9781424404698
76. Siniscalchi, S.M., Li, J., Lee, C.-H., *A study on lattice rescoring with knowledge scores for automatic speech recognition*, (2006) Proceedings of the Annual Conference of the International Speech Communication Association, INTERSPEECH, 1, pp. 517-520. ISSN: 19909772. ISBN: 9781604234497

77. Siniscalchi, S.M., Gennaro, F., Andolina, S., Vitabile, S., Gentile, A., Sorbello, F., *Embedded knowledge-based speech detectors for real-time recognition tasks*, (2006) Proceedings of the International Conference on Parallel Processing Workshops, art. no. 1690720, pp. 355-360. DOI: 10.1109/ICPPW.2006.35. ISSN: 15302016. ISBN: 0769526373; 9780769526379

78. Vitabile, S., Gentile, A., Siniscalchi, S.M., Sorbello, F., *Efficient rapid prototyping of image and video processing algorithms*, (2004) Proceedings of the EUROMICRO Systems on Digital System Design, DSD 2004, pp. 452-458. DOI: 10.1109/DSD.2004.1333310. ISBN: 0769522033; 9780769522036

Books & Editorials

1. Marchi, E., Siniscalchi, S.M., Cumani, S., Salerno, V.M., Li, H., *Preface*, (2021) Lecture Notes in Electrical Engineering, 714. ISSN: 18761100

Hussain, T., Tsao, Y., Siniscalchi, S.M., Wang, J.-C., Wang, H.-M., Liao, W.-H., *Bone-Conducted Speech Enhancement Using Hierarchical Extreme Learning Machine*, (2021) Lecture Notes in Electrical Engineering, 714, pp. 153-162. DOI: 10.1007/978-981-15-9323-914. ISSN: 18761100