

CURRICULUM VITAE ET STUDIORUM SINISCALCHI SABATO MARCO

PERSONAL INFORMATION

FAMILY NAME	SINISCALCHI
NAME	SABATO MARCO
INDIRIZZI MAIL	EMAIL: SINISCALCHI77.19@GMAIL.COM

Degees

1. **Ph.D. in Computer Engineering**, Università degli Studi di Palermo, January 23rd, 2006, dissertation: *Riconoscimento del Parlato basato su Tecniche di Soppressione del Rumore o di Integrazione della Conoscenza Articolatoria*
2. **Master Degree in Computer Engineering**, Università degli Studi di Palermo, July 18th, 2001, with summa cum laude

Academic Positions

1. **Full Professor**, Machine Learning for Speech, Department of Engineering, Università degli Studi di Palermo., December 28th, 2023.
2. **Adjunct Full Professor/ Professor II** in Machine Learning and Speech Technology, Department of Electronic Systems, Norwegian University of Science and Technology (NTNU), Trondheim. Norway, November, 1st, 2020, **Website:** <https://www.ntnu.no/ansatte/marco.siniscalchi>
3. **Faculty Affiliate** Georgia Institute of Technology (Ga Tech), Atlanta (GA), USA, School of Electrical and Computer Engineering, March 2011.

Spotlight

1. C Chen, Y Hu, CHH Yang, SM Siniscalchi, PY Chen, ES Chng, [Hyporadise: An open baseline for generative speech recognition with large language models](#), Advances in Neural Information Processing Systems (NeurIPS) 36, 2023
2. Chen Chen, Ruizhe Li, Yuchen Hu, Sabato Marco Siniscalchi, Pin-Yu Chen, Ensiong Chng, Chao-Han Huck Yang, ["It's Never Too Late: Fusing Acoustic Information into Large Language Models for Automatic Speech Recognition,"](#) ICLR, 2024
3. Adiban, M., Siniscalchi, M., Stefanov, K., Salvi, G., Hierarchical Residual Learning Based Vector Quantized Variational Autoencoder for Image Reconstruction and Generation, 33rd British Machine Vision Conference, 2023
4. 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
5. 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

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Past Academic Positions

1. **Full Professor** in Computer Engineering, Faculty of Engineering and Architecture, Università Kore di Enna, Italy, October 1st, 2018 – December 28th, 2023.
2. **Chair of the Ph.D. Course in Intelligent Systems** (XXXIX cycle), Faculty of Engineering and Architecture, Università Kore di Enna, Enna, Italy, 2023-2024 (I resigned after moving to University of Palermo)
3. **Chair of the Ph.D. Course in Intelligent Systems** (XXXVIII cycle), Faculty of Engineering and Architecture, Università Kore di Enna, Enna, Italy, 2022-2024 (I resigned after moving to University of Palermo)
4. **Chair of the Master's Degree Course in Artificial Intelligence**, Faculty of Engineering and Architecture, Università Kore di Enna, Enna, Italy, 2021/2022.
5. **Associate Professor** in Computer Engineering, Faculty of Engineering and Architecture, Università Kore di Enna, Italy, 2015-2018.
6. **Chair of the Bachelor's Degree Course** in Computer Engineering, Faculty of Engineering and Architecture, Università Kore di Enna, Enna, Italy, 2018-2021.
7. **Researcher**, Faculty of Engineering and Architecture, Università Kore di Enna, Enna, Italy 2010-2015.
8. **Forsker** (e.q. Ricercatore), Norwegian University of Science and Technology, Trondheim, Norway, 2007-2010
9. **Post-Doctoral Fellow**, Georgia Institute of Technology (Ga Tech), Atlanta (GA), USA, 2006-2007.
10. **PhD Visiting Fellow**, Georgia Institute of Technology (Ga Tech), Atlanta (GA), USA, 2004-2005.

TEACHING DUTIES

Teaching Activities

1. Machine Learning, 2022/2023, **CFU**: 9 (54 hours), **Language**: Italian, Masters' degree in Artificial Intelligence and Cybersecurity, Università Kore di Enna, Enna, Italy
2. Object-Oriented Programming, 2021/2022, **CFU**: 9 (54 hours), **Language**: Italian, Bachelor's degree in Computer Engineering, Università Kore di Enna, Enna, Italy
3. Object-Oriented Programming, 2020/2021, **CFU**: 9 (54 hours), **Language**: Italian, Bachelor's degree in Computer Engineering, Università Kore di Enna, Enna, Italy
4. Object-Oriented Programming, 2019/2020, **CFU**: 9 (54 hours), **Language**: Italian, Bachelor's degree Computer Engineering, Università Kore di Enna, Enna, Italy
5. Object-Oriented Programming, 2018/2019, **CFU**: 9 (54 hours), **Language**: Italian, Bachelor's degree in Computer Engineering, Università Kore di Enna, Enna, Italy
6. Databases, 2016/2017, **CFU**: 9 (72 hours), **Language**: Italian, Bachelor's degree in Computer Engineering, Università Kore di Enna, Enna, Italy
7. Object-Oriented Programming, 2016/2017, **CFU**: 9 (72 hours), **Language**: Italian, Bachelor's degree in Computer Engineering, Università Kore di Enna, Enna, Italy
8. Databases, 2015/2016, **CFU**: 9 (72 hours), **Language**: Italian, Bachelor's degree in Computer Engineering, Università Kore di Enna, Enna, Italy
9. Object-Oriented Programming, 2015/2016, **CFU**: 9 (72 hours), **Language**: Italian, Bachelor's degree in Computer Engineering, Università Kore di Enna, Enna, Italy
10. Databases, 2014/2015, **CFU**: 9 (72 hours), **Language**: Italian, Bachelor's degree in Computer Engineering, Università Kore di Enna, Enna, Italy
11. Object-Oriented Programming, 2014/2015, **CFU**: 9 (72 hours), **Language**: Italian, Bachelor's degree in Computer Engineering, Università Kore di Enna, Enna, Italy

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12. Databases, 2013/2014, **CFU:** 9 (72 hours), **Language:** Italian, Bachelor's degree in Computer Engineering, Università Kore di Enna, Enna, Italy
13. Object-Oriented Programming, 2013/2014, **CFU:** 9 (72 hours), **Language:** Italian, Bachelor's degree in Computer Engineering, Università Kore di Enna, Enna, Italy
14. Databases, 2012/2013, **CFU:** 9 (72 hours), **Language:** Italian, Bachelor's degree in Computer Engineering, Università Kore di Enna, Enna, Italy
15. Object-Oriented Programming, 2012/2013, **CFU:** 9 (72 hours), **Language:** Italian, Bachelor's degree in Computer Engineering, Università Kore di Enna, Enna, Italy
16. Databases, 2011/2012, **CFU:** 9 (72 hours), **Language:** Italian, Bachelor's degree in Computer Engineering, Università Kore di Enna, Enna, Italy
17. Object-Oriented Programming, 2011/2012, **CFU:** 9 (72 hours), **Language:** Italian, Bachelor's degree in Computer Engineering, Università Kore di Enna, Enna, Italy
18. Digital Image Processing, 2010/2011, **CFU:** 9 (72 hours), **Language:** Italian, Masters' degree in Computer Engineering, Università Kore di Enna, Enna, Italy
19. Programming, 2010/2011, **CFU:** 7.5 (60 hours), **Language:** Italian, Bachelor's degree in Computer Engineering, Università Kore di Enna, Enna, Italy
20. Logic and Computer Design Fundamentals, 2001/2002, **CFU:** 6 (48 hours), **Language:** Italian, Bachelor's degree in Computer Engineering, Università degli Studi di Palermo, Palermo, Italy.
21. Logic and Computer Design Fundamentals, 2001/2002, **CFU:** 6 (48 hours), **Language:** Italian, Bachelor's degree in Electrical Engineering, Università degli Studi di Palermo, Palermo, Italy.

SUPPLEMENTARY TEACHING AND STUDENT SERVICE ACTIVITIES

Student Supervision

1. **Bachelors' supervision (classe L8):** Supervised around 30 students, Faculty of Engineering and Architecture, Università Kore di Enna, Enna, Italy
2. **PhD supervision:** 8 students (Georgia Institute of Technology, co-supervised with Prof. C.-H. Lee), 1 student (Norwegian University of Science and Technology, co-supervised with Prof. T. Svendsen), 2 students (Università Kore di Enna)

Seminars

Title: *Graphical models and Time and frequency domain techniques for phonetic feature detection*, International Ph.D. course on "Automatic speech recognition - advanced topics" (7.5 ECTS), The Nordic Graduate School of Language Technology (NGSLT), Norwegian University of Science and Technology (NTNU), Trondheim, Norway, 2008.

SCIENTIFIC ACTIVITIES

Peer-review Journals

1. 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
2. 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)
3. 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
4. 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
5. 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
6. 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
7. 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
8. 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
9. 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
10. 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
11. 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
12. 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
13. 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

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14. 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
15. 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
16. 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
17. 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
18. 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
19. 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
20. 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
21. 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
22. 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
23. 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
24. 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
25. 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
26. 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
27. 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
28. 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

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29. 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
30. 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
31. 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
32. 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
33. 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
34. Siniscalchi, S.M., Li, J., Pilato, G., Vassallo, G., Clements, M.A., Gentile, A., Sorbello, F., *Application of Eanets to feature recognition of articulation manner in knowledge-based automatic speech recognition*, (2006) *Lecture Notes in Computer Science* (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 3931 LNCS, pp. 140-146. DOI: 10.1007/11731177_21. ISSN: 03029743. ISBN: 3540331832; 9783540331834
35. Siniscalchi, S.M., Gennaro, F., Vitabile, S., Gentile, A., Sorbello, F., *Efficient FPGA implementation of a knowledge-based automatic speech classifier*, (2005) *Lecture Notes in Computer Science* (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 3820 LNCS, pp. 198-209. DOI: 10.1007/11599555_21. ISSN: 03029743. ISBN: 3540308814; 9783540308812

International Peer-review Conferences

7. C Chen, Y Hu, CHH Yang, SM Siniscalchi, PY Chen, ES Chng, [Hyporadise: An open baseline for generative speech recognition with large language models](#), *Advances in Neural Information Processing Systems (NeurIPS)* 36, 2023
8. Chen Chen, Ruizhe Li, Yuchen Hu, Sabato Marco Siniscalchi, Pin-Yu Chen, Ensiong Chng, Chao-Han Huck Yang, ["It's Never Too Late: Fusing Acoustic Information into Large Language Models for Automatic Speech Recognition,"](#) *ICLR*, 2024
9. A. Hsie, C.H. H. Yang, S. M. SINISCALCHI, P.-Y. Chen, and Y. Tsao, "Inference and Denoise: Causal Inference-based Neural Speech Enhancement," *IEEE MLSP*, 2023
10. 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,
11. 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
12. 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)
13. C.-W. Ho, C.-H. H. Yang, and S. M. SINISCALCHI, "Differentially Private Adapters for Parameter Efficient Acoustic Modeling" *INTERSPEECH* 2023 (accepted)
14. 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

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15. 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
16. 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
17. 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
18. 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
19. 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
20. 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
21. 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
22. 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: 9781713836902
23. 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
24. 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
25. 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
26. 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

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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
2. 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: 10.1007/978-981-15-9323-9_14. ISSN: 18761100

Organisation, Direction And Coordination Of National And International Research Centers Or Groups

Director of the "Laboratory for Speech Technology Research and Machine Learning" – STMLab, established with Presidential Decree n. 149/2016 on 25 October 2016.

Link: <https://www.unikore.it/index.php/presentazione-lab-stmb>.
Cooperation with the following institutes/universities:

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School of Electrical and Computer Engineering - ECE, Georgia Institute of Technology, Atlanta (GA) USA (Prof. C.-H. Lee)
Speech Group at the Norwegian University of Science and Technology - NTNU, Trondheim, Norway (Prof. T. Svendsen)
Research Center for Information Technology Innovation, Academia Sinica - Taipei, Taiwan (Prof. Y. Tsao)
School of Computing della University of Eastern Finland, Joensuu, Finlandia (Prof. Ville Hautamaki)
Bing Speech and Language Sciences, Microsoft Corporation, Redmond, WA 98052 USA (Dr. Jinyu Li, Principal Applied Scientist)
Siri Speech Group, Apple Inc., Cupertino, CA USA (Dr. Alex Acero)

Funded Research Projects

1. **MUR PRIN 2022** - Progetti di Rilevante Interesse Nazionale - 2022-2025. **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**: PNC_0000002. **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 milion (€ 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**: 2017JNKCYZ. **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 milion (€ 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**: 20097THAEX_002.

Scientific Consulting Activities

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

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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 Kore di Enna. **Periodo** giugno - dicembre 2020

Editorial Activities & Services

1. 2015-2019 ASSOCIATE EDITOR - IEEE/ACM Transactions on Audio Speech and Language Processing, ISSN: 2329-9290 (**Certificate of Merit for outstanding editorial board service**)
2. **Area Chair**, International Conference on Learning Representation, 2023 (ICLR 2023) and 2024 (ICLR 2024)
3. **Area Chair**, IEEE International Conference of Acoustic, Speech and Signal Processing, 2021-2022 (ICASSP 2021, ICASSP 2022)
4. **General Co-Chair** della Decima Conferenza ISCA (International Speech Communication Association) su Spoken Dialogue Systems Technology (IWSDS) 2019.. Siracusa, 24 - 26 aprile 2019. [iwsds2019.unikore.it]
5. **Session Chair:** (i) Multimodal Processing of Language and Language Systems II, (ii) Speech Enhancement /Audio-Visual, Multi-Channel, and Other, and (iii) Multimodal Information Based Speech Processing (MISP) 2022 Challenge. ICASSP 2023, Rhodes, Greece, June 2023.
6. **Session Co-Chair:** Speech Enhancement, IEEE ICASSP, Virtual COVID-19 Conference, May 2020
7. **Session Co-Chair:** Zero-Resource ASR, ISCA INTERSPEECH, Graz, Austria, September 2019
8. **Session Chair:** SLP-P9: Keyword Spotting and Embedded ASR Systems, IEEE ICASSP, Brighton, UK, May 2019
9. **Session Chair:** HLT-P4: *Spoken Language Acquisition and Retrieval*, IEEE ICASSP, Calgary, Canada, April 2018
10. **Session Chair:** SLTC-6 *Articulatory Features in Speech Processing*, IEEE ICASSP, Florence, Italy, May 2014

Patents

Titolo: Low-latency multi-speaker speech recognition. **Autori:** M Delfarah, OA Abdelhamid, K Hwang, DR McAllaster, SM Siniscalchi. **Data Pubblicazione:** 18/10/2022. **Ufficio Brevetti:** US (United States of America). **Numero Brevetto:** US 11475898 B2. **Numero della Applicazione:** 16/534,902. **Tipologia applicazione:** Worldwide applications

Fellowships

2020-today	Adjunct Professor / Professor II, Norwegian University of Science and Technology, Trondheim, Norway
2015-2016	NOKIA VISITING PROFESSOR SCHOLARSHIP, March 22 nd , 2015 . March 22 nd , 2016.
2013-2016/2019-2020	RESEARCH SCHOLAR, School of Electrical and Computer Engineering del Georgia Institute of Technology, Atlanta, GA, USA.
2011	RESEARCH FELLOW, Georgia Institute of Technology, Atlanta, GA, USA, 14-03-2011 al 14-06-2011

CURRICULUM VITAE ET STUDIORUM
SINISCALCHI SABATO MARCO

2012	RESEARCH FELLOW, Georgia Institute of Technology, Atlanta, GA, USA, 16-03-2012 - 15-06-2012
2010	RESEARCH FELLOW, Georgia Institute of Technology, Atlanta, GA, USA, 01-07-2010 - 03-09-2010

Invited Talks

- **January 2017** - Siri Group, Apple, Cupertino, CA, USA. Talk Title: *Transfer Learning and Signal Space Enhancement for Robust Automatic Speech Recognition*
- **May 2008** - Microsoft Research, Speech and Spoken Dialog Group, Microsoft Corporation, Redmond, WA, USA. Talk Title: *A detection-based approach to automatic speech recognition*

ADDITIONAL INFORMATION

11. Elected Member IEEE Speech and Language Technical Committee - **SLTC** (2023-2026).
12. Co-organizer - In-Context Learning Methods for Speech and Spoken Language Processing Special Sessions, IEEE ICASSP 2024
13. Co-organizer - Multimodal Information Based Speech Processing (MISP) Challenge, Link: <https://mispchallenge.github.io/index.html>
14. Elected Member IEEE Speech and Language Technical Committee - **SLTC** (2018-2022).