

# Publications by Zhao Ren

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## I. BOOK CHAPTERS

- 1) N. Cummins, Z. Ren, A. Mallol-Ragolta, and B. W. Schuller, *Artificial Intelligence in Precision Health*, ch. Chapter 5 – Machine learning in digital health, recent trends, and ongoing challenges, pp. 121–148. Elsevier, 2020

## II. GUEST EDITORIALS

- 2) Z. Ren, B. W. Schuller, B. M. Eskofier, T. N. Nguyen, and W. Nejdl, “Guest editorial trustworthy and collaborative AI for personalised healthcare through edge-of-things,” *IEEE Journal of Biomedical and Health Informatics*, pp. 5213 – 5215, Nov. 2023

## III. JOURNAL ARTICLES

- 3) T. T. Nguyen, Z. Ren, T. Pham, P. Le Nguyen, Q. V. H. Nguyen, and H. Yin, “A review of instruction-guided image editing,” *Engineering Applications of Artificial Intelligence*, vol. 163, p. 112953, 2026
- 4) T. T. Nguyen, T. T. Huynh, Z. Ren, P. L. Nguyen, A. W.-C. Liew, H. Yin, and Q. V. H. Nguyen, “A survey of machine unlearning,” *ACM Transactions on Intelligent Systems and Technology*, vol. 16, no. 5, 2025. 46 pages
- 5) P. Wißbrock, L. Koschek, Z. Ren, and W. Nejdl, “Enhancing quality inspection of highly variant geared motors,” *Applied Acoustics*, vol. 235, no. 110687, pp. 1–17, 2025
- 6) Y. Sun, Y. Zhou, X. Xu, J. Qi, F. Xu, Z. Ren, and B. W. Schuller, “Weakly-supervised depression detection in speech through self-learning based label correction,” *IEEE Transactions on Audio, Speech and Language Processing*, 2025. 11 pages
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- 8) T. T. Nguyen, T. T. Huynh, Z. Ren, T. T. Nguyen, P. L. Nguyen, H. Yin, and Q. V. H. Nguyen, “Privacy-preserving explainable AI: A survey,” *SCIENCE CHINA Information Sciences*, vol. 68, no. 111101, pp. 1–34, 2025
- 9) P. Wißbrock, Z. Ren, and D. Pelkmann, “More than spectrograms: Deep representation learning for machinery fault detection,” *Applied Acoustics*, vol. 225, no. 110178, pp. 1–14, 2024
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- 12) Z. Ren, Y. Chang, W. Nejdl, and B. Schuller, “Learning complementary representations via attention-based ensemble learning for cough-based COVID-19 recognition,” *Acta Acustica*, vol. 6, no. 29, pp. 1–5, 2022
- 13) Z. Ren, Y. Chang, K. D. Bartl-Pokorny, F. B. Pokorny, and B. Schuller, “The acoustic dissection of cough: Diving into machine listening-based COVID-19 analysis and detection,” *Journal of Voice*, 2022. to appear
- 14) Z. Ren, K. Qian, F. Dong, Z. Dai, W. Nejdl, Y. Yamamoto, and B. Schuller, “Deep attention-based neural networks for

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- 16) K. Qian, M. Schmitt, H. Zheng, T. Koike, J. Han, J. Liu, W. Ji, J. Duan, M. Song, Z. Yang, Z. Ren, S. Liu, Z. Zhang, Y. Yamamoto, and B. W. Schuller, “Computer audition for fighting the SARS-CoV-2 corona crisis – Introducing the multi-task speech corpus for COVID-19,” *IEEE Internet of Things Journal*, 2021. 12 pages
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- 18) M. Song, A. Mallol-Ragolta, E. Parada-Cabaleiro, Z. Yang, S. Liu, Z. Ren, Z. Zhao, and B. W. Schuller, “Frustration recognition from speech during game interaction using wide residual networks,” *Virtual Reality & Intelligent Hardware*, vol. 3, pp. 76–86, Feb. 2021
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## IV. CONFERENCE PAPERS

- 26) R. A. Rammohan, Z. Ren, A. Swiderska, D. Küster, and T. Schultz, “Unveiling deep speech embeddings: Acoustic insights into hatespeech detection,” in *ITG*, 2025
- 27) Y. Chang, Z. Ren, Z. Zhao, T. T. Nguyen, K. Qian, T. Schultz, and B. W. Schuller, “Breaking resource barriers in speech emotion recognition via data distillation,” in *Proc. INTERSPEECH*, (Rotterdam, The Netherlands), pp. 141–145, 2025
- 28) K. Scheck, T. Dombeck, Z. Ren, P. Wu, M. Wand, and T. Schultz, “DiffMV-ETS: Diffusion-based multi-voice electromyography-to-speech conversion using speaker-independent speech training targets,” in *Proc. INTERSPEECH*, (Rotterdam, The Netherlands), pp. 5573–5577, 2025
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  - 34) K. Scheck, Z. Ren, T. Dombeck, J. Sonnert, S. v. Gogh, Q. Hou, M. Wand, and T. Schultz, “Cross-speaker training and adaptation for electromyography-to-speech conversion,” in *Proc. EMBC*, 2024
  - 35) Q. Hou, S. v. Gogh, K. Scheck, Z. Ren, T. Schultz, M. Wand, and J. Schmidhuber, “emg2vec: Self-supervised pretraining in electromyography-based silent speech interfaces,” in *Proc. EMBC*, 2024
  - 36) M. Song, Z. Yang, A. Triantafyllopoulos, Y. Nakamura, Toru Zhang, Z. Ren, H. Takeuchi, A. Kishi, T. Ishizawa, K. Yoshiuchi, H. Zhang, K. Qian, B. Hu, B. W. Schuller, and Y. Yamamoto, “Crossmodal transformer on multi-physical signals for personalised daily mental health prediction,” in *Proc. ICDMW*, 2023
  - 37) Z. Ren, K. Qian, T. Schultz, and B. W. Schuller, “An overview of the icassp special session on ai security and privacy in speech and audio processing,” in *ACM Multimedia Asia workshop*, (Tainan, Taiwan), 2023
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  - 39) K. Scheck, D. Ivucic, Z. Ren, and T. Schultz, “Stream-ETS: Low-latency end-to-end speech synthesis from electromyography signals,” in *Proc. ITG*, (Aachen, Germany), pp. 200–204, 2023
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  - 41) Z. Ren, T. T. N. Nguyen, M. M. Zahed, and W. Nejdl, “Self-explaining neural networks for respiratory sound classification with scale-free interpretability,” in *Proc. IJCNN*, (Gold Coast, Australia), 2023. to appear
  - 42) T. T. Nguyen, Q.-D. Nguyen, Z. Ren, J. Jo, Q. V. H. Nguyen, and T. T. Nguyen, “10X faster subgraph matching: Dual matching networks with interleaved diffusion attention,” in *Proc. IJCNN*, (Gold Coast, Australia), 2023. to appear
  - 43) Z. Ren, T. T. Nguyen, Y. Chang, and B. W. Schuller, “Fast yet effective speech emotion recognition with self-distillation,” in *Proc. ICASSP*, (Rhodes, Greece), 2023. to appear
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## VII. PATENTS

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## V. DISSERTATION

- 77) Z. Ren, *Deep learning techniques for computer audition*. PhD thesis, Faculty of Applied Computer Science, University of Augsburg, 2022

## VI. TECHNICAL REPORTS

- 78) Z. Ren, Y. Chang, and B. W. Schuller, "The EIHV-GLAM deep attentive multi-model fusion system for cough-based COVID-