

Dr.-Ing. Ziyue Zhao

CV Version: August 2026

Senior Research Scientist at GN Hearing

Email: zzhao@gnhearing.com

[LinkedIn](#), [Google Scholar](#), [ORCID](#)

WORK EXPERIENCE

From Sept. 2024 till now	Senior Research Scientist GN Hearing, Eindhoven, the Netherlands
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Jan. 2021–Aug. 2024	Research Scientist GN Hearing, Eindhoven, the Netherlands
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Main responsibilities:

- Lead the design and development of DNN-based real-time speech enhancement solutions for core features in hearing aid products.
- Optimize algorithms for specific embedded hardware platforms under the constraints of hearing instruments (latency, power consumption, and memory).
- Drive the development of customized cloud-based workflows and pipelines for training, inference, and evaluation of hearing-instrument algorithms.
- Support audiology and electro-acoustics departments in designing and conducting laboratory tests/studies for algorithm evaluation.
- Support company's intellectual property portfolio through patent applications.
- Support company's long-term research by collaborating with academic partners.

Aug. 2019–Oct. 2019	Research Intern BabbleLabs Inc. (now part of Cisco), Warsaw, Poland
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EDUCATION

Sept. 2015–Dec. 2020	Ph.D. (Dr.-Ing.) Institute for Communications Technology, Technische Universität Braunschweig, Germany • Supervisor: Prof. Dr.-Ing. Tim Fingscheidt • Doctoral degree awarded in May 2022 (with distinction, <i>magna cum laude</i>). • Dissertation: <i>Contributions to Neural Network-Based Speech Processing: Nonlinear Speech Prediction, Decoder Postprocessing, and Perceptual Loss Functions</i>
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Aug. 2012–Jan. 2015	Master of Engineering (M.Eng.) Electronics and Communications Engineering Xidian University, China
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Aug. 2008–Jul. 2012	Bachelor of Science (B.Sc.) Electronic Information Engineering Xidian University, China
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HONORS AND AWARDS

Dec. 2020	ITG Preis 2020 from the Information Technology Society (ITG) of the Association of German Electrical Engineers (VDE) for annually best scientific publications (three papers per year)
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Sept. 2018	Best Student Paper Award from European Association for Signal Processing (EURASIP) in European Signal Processing Conference (EUSIPCO) (two papers in 2018)
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PUBLICATIONS AND PATENTS

H. Lugo Girao, E. Seidel, P. Mowlae, **Z. Zhao**, T. Fingscheidt, “DiffVQE2: An Efficient Low-Delay Diffusion Model for Acoustic Echo and Noise Control”, accepted by *International Workshop on Acoustic Signal Enhancement (IWAENC)*, Cremona, Italy, Sept. 2026.

H. Lugo Girao, E. Seidel, P. Mowlae, **Z. Zhao**, T. Fingscheidt, “DiffVQE: Hybrid Diffusion Voice Quality Enhancement Under Acoustic Echo and Noise”, accepted by *INTERSPEECH*, Sydney, Australia, Sept. 2026.

Z. Zhao, B. Dam Pedersen, and E. van der Werf, “Hearing Device with Machine Learning-Based Noise Cancellation”, *International Patent*, 2025.

J. Beckers, B. Van Erp, **Z. Zhao**, K. Kondrashov, B. De Vries, “[Principled Pruning of Bayesian Neural Networks Through Variational Free Energy Minimization](#)”, *IEEE Open Journal of Signal Processing*, vol. 5, pp. 195–203, Nov. 2023.

Z. Xu, **Z. Zhao**, and T. Fingscheidt, “[Coded Speech Quality Measurement by a Non-Intrusive PESQ-DNN](#)”, *IEEE/ACM Transactions on Audio, Speech, and Language Processing*, vol. 31, pp. 3404–3417, Sept. 2023.

Z. Xu, S. Elshamy, **Z. Zhao**, and T. Fingscheidt, “[Components Loss for Neural Networks in Mask-Based Speech Enhancement](#)”, *EURASIP Journal on Audio, Speech, and Music Processing*, vol. 2021, no. 24, pp. 663–678, Jul. 2021.

Z. Zhao, S. Elshamy, and T. Fingscheidt, “[A Perceptual Weighting Filter Loss for DNN Training in Speech Enhancement](#)”, **Travel Award**, in *Proc. of IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA)*, New Paltz, NY, USA, Oct. 2019, pp. 224–228.

C. Brauer, **Z. Zhao**, D. Lorenz, and T. Fingscheidt, “[Learning to Dequantize Speech Signals by Primal-Dual Networks: An Approach for Acoustic Sensor Networks](#)”, in *Proc. of International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Brighton, UK, May 2019, pp. 7000–7004.

Z. Zhao, H. Liu, and T. Fingscheidt, “[Convolutional Neural Networks to Enhance Coded Speech](#)”, **ITG Preis 2020**, *IEEE/ACM Transactions on Audio, Speech, and Language Processing*, vol. 27, no. 4, pp. 663–678, Apr. 2019.

Z. Zhao, H. Liu, and T. Fingscheidt, “[Enhancement of G.711-Coded Speech Providing Quality Higher Than Uncoded](#)”, in *Proc. of ITG Conference on Speech Communication*, Oldenburg, Germany, Oct. 2018, pp. 211–215.

Z. Zhao, S. Elshamy, H. Liu, and T. Fingscheidt, “[A CNN Postprocessor to Enhance Coded Speech](#)”, in *Proc. of International Workshop on Acoustic Signal Enhancement (IWAENC)*, Tokyo, Japan, Sept. 2018, pp. 406–410.

Z. Zhao, H. Liu, and T. Fingscheidt, “[Nonlinear Prediction of Speech by Echo State Networks](#)”, **European Association for Signal Processing (EURASIP) Best Student Paper Award**, in *Proc. of European Signal Processing Conference (EUSIPCO)*, Rome, Italy, Sept. 2018, pp. 2099–2103.

Z. Zhao, S. Han, and T. Fingscheidt, “[Improving Vector Quantization-Based Decoders for Correlated Processes in Error-Free Transmission](#)”, in *Proc. of ITG Conference on Speech Communication*, Paderborn, Germany, Oct. 2016, pp. 70–74.

PROFESSIONAL SERVICE

- Academic collaboration and mentoring:
 - Lead company co-supervisor for the industrial PhD program titled *Improved Speech Communication Using Adaptive Voice Models* with Aalborg University under an approved funding from Innovation Fund Denmark from March 2026.
 - Company co-supervisor for the industrial PhD program titled *AI-Guided Filtering Methods for Voice Pickup* with Aalborg University from October 2025.
 - Company co-supervisor for the PhD collaboration project titled *Next Generation Postfiltering, GenAI Handsfree and Metrics* with Technische Universität Braunschweig from April 2025.
 - Company co-supervisor for the Master thesis titled *Training and Compression of Bayesian Neural Networks through Free Energy Minimization* with Eindhoven University of Technology from December 2021 to July 2022.
- Peer-reviewed papers for: IEEE/ACM Transactions on Audio, Speech and Language Processing; IEEE Signal Processing Letters; IEEE Journal of Selected Topics in Signal Processing; IEEE Transactions on Cognitive Communications and Networking; IEEE Transactions on Human-Machine Systems; Computer Methods in Biomechanics and Biomedical Engineering; CAAI Transactions on Intelligence Technology; Artificial Intelligence Review; IET Signal Processing; Plos One; INTERSPEECH; ICASSP; SLT.
- Member of: IEEE Signal Processing Society (SPS), Association of German Electrical Engineers (VDE) Information Technology Society (ITG), European Association for Signal Processing (EURASIP), and International Speech Communication Association (ISCA)