Chen Xu

PhD in Psychoacoustics | Mobile Hearing Diagnostics | Digital Hearing Healthcare

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Education

University of Oldenburg *Oldenburg, Germany*

PhD Medical Physics *10.2020 - 05.2025*

- Advisor: Prof. Dr. Dr. Birger Kollmeier
- Structured doctoral degree program: Neurosensory Science and Systems
- Dissertation: Crucial Elements of a Virtual Hearing Clinic on Mobile Devices: Psychophysics, Diagnostic Parameter Estimation, and Validation (**magna cum laude**)
- Research interests: mobile health application, machine learning, psychophysical and hearing research

Technical University of Munich *Munich, Germany*

Master of Science *10.2017 - 09.2020*

- Advisor: Prof. Dr. Bernhard Wolfrum
- Master program: Electrical Engineering and Information Technology
- Master thesis: Data-Driven Error Detection with Hybrid EEG-fNIRS Measurements

Northwestern Polytechnical University *Xi'an, China*

Bachelor of Engineering *09.2013 - 06.2017*

- Majors in Automation and Control Theory

Technical Skills

Programming:	Python, R, Matlab, C++, Octave, Bash
Web Programming:	HTML, CSS, JavaScript, Flask, SQLite
Software & Tools:	SSH, Git, Zsh, Docker, Office, Latex
Data Science Packages:	**Python:** NumPy, Pandas, Keras, Tensorflow, Scikit-Learn, Jupyter, etc. **R:** dplyr, ggplot2, tidyr, tidyverse, etc.
Statistics & Machine learning:	Statistical Analysis, Linear/Logistic Regression, Clustering, etc.
Electrical Engineering:	Raspberry Pi
Language:	Chinese (native), English (CET6 & DAAD-Test B2-C1), German (DSH2)

Professional Experience

2020-now	**Research & Teaching Assistant**, Dept. of Medical Physics and Acoustics, University of Oldenburg
2020	**Research Assistant**, Max Planck Institute of Psychiatry
2020	**Research Assistant**, Helmholtz Zentrum München
2020	**Semester Project**, TUM data innovation lab, BMW IT center
2019-2020	**Working Student**, Siemens AG

Publications

Published

Xu, C., Hülsmeier, D., Buhl, M., & Kollmeier, B. (2024). How Does Inattention Influence the Robustness and Efficiency of Adaptive Procedures in the Context of Psychoacoustic Assessments via Smartphone? Trends in Hearing. 2024;28. doi: 10.1177/23312165241288051

Xu, C., Schell-Majoor, L., & Kollmeier, B. (2024). Development and verification of non-supervised smartphone-based methods for assessing pure-tone thresholds and loudness perception. International Journal of Audiology, 1–11. doi: 10.1080/1

4992027.2024.2424876.

In Review

Xu, C., Schell-Majoor, L., & Kollmeier, B. (2024). Feasibility of efficient smartphone-based threshold and loudness assessments in typical home settings. Manuscript submitted for publication in Trends in Hearing.

In Prep

Xu, C., Schell-Majoor, L., & Kollmeier, B. (2023a). Predict standard audiogram from a loudness scaling test employing unsupervised, supervised, and explainable machine learning techniques. Manuscript in preparation.

Xu, C., Schell-Majoor, L., & Kollmeier, B. (2023b). Derive a robust and optimal feature set for standard audiogram prediction. Manuscript in preparation.

Xu, C., Schell-Majoor, L., & Kollmeier, B. (2023c). Comparison of auditory profiles using manifold learning and intrinsic measures. Manuscript in preparation.

Awards

2025 **Congress Scholarships**, European Federation of Audiology Societies, Vienna
2025 **Travel Grant**, Precision Digital Therapeutics Master Class, Singapore-ETH Centre, Singapore
2024 **Travel Grant**, Graduate School Science, Medicine and Technology - OLTECH
2023 **Travel Grant**, Graduate School Science, Medicine and Technology - OLTECH
2020 **Starting Stipends**, Collaborative Research Centre SFB 1330 Hearing Acoustics (HAPPAA)
2019 **Swiss-European Mobility Programme**, École polytechnique fédérale de Lausanne
2018, 2019 **Scholarships for TUM international students** , Bavarian government

Presentations

Contributed Oral Presentations

Kollmeier, B, Schell-Majoor, L., **Xu, C.** (2025b). Graded Response Bracketing (GraBr) - An efficient and robust procedure for self-administered threshold determination. In 17th European Federation Audiology Societies Congress, Vienna, Austria.

Xu, C., Schell-Majoor, L., & Kollmeier, B. (2025a). Reinforced categorical loudness scaling (rCLS) – An efficient procedure for self-administered simultaneous assessment of hearing thresholds and loudness perception. In 17th European Federation Audiology Societies Congress, Vienna, Austria.

Xu, C., Schell-Majoor, L., & Kollmeier, B. (2024). Predict standard audiogram from a loudness scaling test employing unsupervised, supervised, and explainable machine learning techniques. In Proc. "Fortschritte der Akustik - DAGA'24", Hannover, Germany.

Xu, C., Schell-Majoor, L., & Kollmeier, B. (2023a). Development and verification of self-supervised smartphone-based methods for assessing pure-tone audiometry and loudness growth function. In 16th European Federation Audiology Societies Congress, Sibenik, Croatia.

Xu, C., Schell-Majoor, L., & Kollmeier, B. (2023b). Smartphone-based hearing tests for a Virtual Hearing Clinic: Influence of ambient noise on the absolute threshold and loudness scaling at home. In Virtual Conference on Computational Audiology VCCA June 29-30, online.

Kollmeier, B., Warzybok, A., Saak, S., **Xu, C.**, & Schell-Majoor, L. (2023). Psychoacoustics with limited resources: How smartphone-based hearing tests change hearing research. International Symposium on Auditory and Audiological Research ISAAR, Nyborg, Denmark.

Contributed Poster Presentations

Xu, C., Schell-Majoor, L., & Kollmeier, B. (2024). Towards a robust and optimum prediction of audiometric profiles from non-audiometric features. In Audiological Research Cores in Europe (ARCHES), Leuven, Belgium.

Xu, C., Hülsmeier, D., Buhl, M., & Kollmeier, B. (2022). How Robust and Efficient Are Different Adaptive Hearing Threshold Procedures for Use With Mobile Devices. In Audiological Research Cores in Europe (ARCHES), Amsterdam, The Netherlands.

Seminar Talks

Xu Chen (2024, May). Comparison between model-based and model-free adaptive procedures in terms of the inattentive listener using smartphones. Online Audiology Journal Club, Univ of Washington (UW), Seattle, USA.

Xu Chen (2023, October). How does the ambient noise influence the smartphone-based hearing tests? Online Audiology Journal Club, the Univ of Hong Kong (HKU), Hong Kong, China.

Teaching Experience

2024-2025	**Advanced seminar in medical physics**, Assessor	*Oldenburg*
2021-2023	**Physiological, psychological, and audiological acoustics**, Teaching Assistant	*Oldenburg*

Outreach & Professional Development

Service and Outreach

2022	**Hearing4all Summer School**, Conference Organizer	*Visselhövede*
2022	**SFB 1330 PhD Students' Retreat**, Organizer	*Wardenburg*
2022	**10 Year Anniversary of the Oldenburg Medical School (UMO)** , Demonstrator	*Oldenburg*
2020	**German Academic Exchange Service (DAAD) 'my research diary'**, Volunteer	*Oldenburg*

Development

2024	**Summer School on Machine Learning & Numerics for Acoustics**, Oldenburg
2024	**Mediterranean Machine Learning Summer School (M2L)**, Milan
2024	**EuADS Summer School – Generative AI**, Luxembourg
2024	**Docker for Neuroscience**, Oldenburg
2023	**Advanced Topics and Publications in Hearing Research**, Hvar
2023	**Mobile Health in Communication, Perception, and Mobility**, Oldenburg
2023	**Research Data Management**, Oldenburg
2023	**Winter School "Hearing Acoustics"** , Oldenburg
2022	**Hearing4all International Symposium**, Hannover

Professional Memberships

Student Membership of the International Society of Audiology (ISA)
Membership of the European Association for Data Science (EuADS)
Member of the Computational Audiology Network Special Interest Group (CAN-SIG)
Member of the European Acoustics Association (EAA) Young Acousticians Network (YAN)

Peer Review

Ear and Hearing

Certifications

2022	**Audiometry for Intermediates**, Interacoustics A/S
2021	**Responsive Website Basics: Code with HTML, CSS, and JavaScript**, Coursera
2020	**Recommendation Systems on Google Cloud**, Coursera
2020	**Introduction to Digital Health**, Coursera