Karin Loh
Mobile: +49 151 442 279 85 | Mail: karin.loh@posteo.net | Website: karin-loh.net

Curriculum Vitae

Dedicated to working in the linkage of human and technology interaction
with the goal to contribute to human health and well-being.

Currently, I am working on research projects exploring hearing and cognitive abilities in young children with respect to spatial, noise, and health aspects. I am a creative, analytical problem solver with a proven ability to work in inter- and multi-disciplinary projects and teams within an international context.

Professional Experiences

05/2017 – 12/2023 **Institute for Hearing Technology and Acoustics** (previously Institute of Technical Acoustics, Medical Acoustics Group), RWTH Aachen University, Germany

02/2021 – 12/2023 **Chief engineer**

- Institute organization & representation
- Teaching management
- Data protection management
- Organizational process development and implementation
- Team event organization and onboarding management
- Research (data, project & knowledge) management
- Funding acquisition for teaching and equipment
- Contribution to grant applications (EU-Horizon2020, DFG, DFG-RTG, DFG-SPP, AiF, BmDV, DFG-RTG, among others; only granted listed)
  - 2018: DFG research training group RTG 2416:
    MultiSenses – MultiScales: Novel approaches to decipher neural processing in multisensory integration
    (12 partners, granted, 36 PM + equipment)
  - 2019: H2020-EU.3.1.2:
    Equal-Life – Early Environmental quality and life-course mental health effects
    (20 partners, granted, 47 PM + resources for 10 experiment)
  - 2019: DFG priority program SPP2236 Audictive:
    Listening to, and remembering conversations between two talkers: Cognitive research using embodied conversational agents in audiovisual virtual environments
    (3 partners, granted, 36 PM + student worker + equipment)
  - 2019: DFG priority program SPP2236 Audictive:
    Evaluating cognitive performance in classroom scenarios with audiovisual virtual reality – ECoClass-VR
    (3 partners, granted, 36 PM + student worker + equipment)
  - 2022: BmDV-mFUND:
    BaLSaM – Braunkohlereviere als attraktive Lebensräume durch Straßengeräuschsimulation auf Basis bestehender Verkehrsdaten zur Minimierung von Lärm
    (EN: Lignite mining areas as attractive habitats by road noise simulation based on existing traffic data to minimize noise)
    (5 partners, granted, 36 PM + student worker + equipment)
  - 2022: DFG research training group RTG 2416:
    Renewal proposal: MultiSenses – MultiScales: Novel approaches to decipher neural processing in multisensory integration
    (13 partners, granted, 36 PM + equipment)
- Contribution to and support in other research projects
  - DFG: *Differential mechanisms of cognitive impairment due to task-irrelevant sounds in children and adults*
  - DFG-SPP2236 Audictive: *Evaluating cognitive performance in classroom scenarios with audiovisual virtual reality – ECoClass-VR*
  - BMDV-mFUND: *BaLSaM – Braunkohlereviere als attraktive Lebensräume durch Straßengeräuschsimulation auf Basis bestehender Verkehrsdaten zur Minimierung von Lärm*

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05/2017 – 12/2023 **Research associate**

Research projects:
- H2020-EU: *Equal-Life – Early environmental quality and life-course mental health effects*
- HEAD-Genuit-Stiftung: *Noise exposition in pre- and primary schools: Assessment using child-appropriate methods, analyses and evaluations*
- ERS Seed Fund, RWTH Aachen University: *Auditory selective attention in preschool and elementary school-aged children – development of a child-appropriate attention paradigm.*

Teaching:
- Lecture and exercises support: Psychoacoustics and Methods for Listening Experiments (Master)
- Seminar: Medical Acoustics, Hearing Technology and Acoustics
- Lab courses: Biomedical Engineering (Bachelor), Hearing Technology and Acoustics (Master), & Advanced Biomedical Engineering (Master)

Student supervision:
- 7 bachelor theses
- 9 master theses
- 13 student workers

11/2016 – 02/2017 **Faculty of Electrical Engineering**, RWTH Aachen University, Germany

Student research assistant:
- Project "Introduction to a good study start in Electrical Engineering"
  - Conceptualization
  - Teaching and learning material generation
  - Tutor coordination, supervision, and training,
  - Student management

06/2016 – 10/2016 **Cochlear Benelux NV**, Mechelen, Belgium

Intern:
- Project "Speech Intelligibility Prediction" – Development of a new and improved predictor of speech intelligibility for cochlear implant applications in MATLAB
- Project "Multilingual Digit Triplet Test" – Development of a consistent digit corpus in different languages using text-to-speech (TTS) generators and post-processing in MATLAB

10/2015 – 12/2015 **Abiomed Europe**, Aachen, Germany

Intern:
- Research department - signal processing in cardiac implants using MATLAB

07/2015 – 12/2015 **Institute of Technical Acoustics**, Medical Acoustics Group, RWTH Aachen University, Germany

Student research assistant:
- Project "iCARE – Improving Children's Auditory Rehabilitation" – Development and implementation of a listening experiment in MATLAB

02/2015 – 07/2015 **Chair of Mathematics**, RWTH Aachen University, Germany

Tutor:
- Project "A Good Academic Start in Engineering"

11/2014 – 02/2015 **Institute of Materials in Electrical Engineering 1**, RWTH Aachen University, Germany

Tutor:
- Fundamentals of Electrical Engineering

12/2013 – 05/2014 **Institute of Materials in Electrical Engineering 1**, RWTH Aachen University, Germany

Student research assistant:
- Project InMEAs and Project VLARS – Charaterization of micro electrode arrays, design and realization of a multiplexer board

06/2012 – 11/2013 **Philips Chair of Information Technology**, RWTH Aachen University, Germany

Student research assistant:
- MedIT exoskeleton, a mechatronic project
  - Design and realization of simple circuit boards
  - Project documentation
  - Mechanical adjustments of the test bench
  - Data post-processing using MATLAB
  - Adaptation of simulations in SimuLink and SimMechanics

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Education

since 10/2017	**RWTH Aachen University**, Aachen (Germany)
Expected graduation: 2024	**Ph.D.** in Electrical Engineering, Information Technology & Computer Engineering Project: Noise exposition in pre- and primary schools: Exploring noise effects in young children **Associated PhD** in Research Training Group RTG 2416: MultiSenses – MultiScales
10/2014 – 05/2017	**RWTH Aachen University**, Aachen (Germany)
	M.Sc. in Electrical Engineering, Information Technology & Computer Engineering Major: Biomedical Engineering
11/2016 – 05/2017	Master thesis: Investigation of noise exposure in educational institutions using aurally-accurate techniques for preschool and primary school-aged children
01/2016 – 05/2016	**Aalto University School of Electrical Engineering**, Espoo (Finland)
	Erasmus Program: Bioinformation Technology
09/2010 – 09/2014	**RWTH Aachen University**, Aachen (Germany)
	B.Sc. in Electrical Engineering, Information Technology & Computer Engineering Major: Computer Engineering
04/2014 – 09/2014	Bachelor thesis: Studies on Auditory Selective Attention with Visual and Acoustic Cues
06/2010	**Städt. Gymnasium Eschweiler**, Eschweiler (Germany)
	Abitur (general qualification for university entrance)

Extra-curricular activities

10/2021 – 12/2023	**Representative for scientific employees of the Electrical Engineering Faculty, RWTH Aachen University** Committee for structure and budget allocation, examination board, appointment committees
04/2019 – 12/2023	**Representative for gender and diversity of the Electrical Engineering Faculty, RWTH Aachen University** Faculty council, appointment committees
04/2021 – 03/2023	**European Acoustics Association (EAA), Young Acousticians Network (YAN)** Vice chairwoman: ▪ Conceptualization and implementation: Forum Laboris (job fair for young acousticians) ▪ Conceptualization and implementation: EAA mentoring program for young acousticians ▪ Organization of conference events for networking purposes ▪ Implementation of stable social media channels and communication ▪ Implementation of an online platform for networking and communication for young acousticians
01/2019 – 12/2019	**TANDEMdok – Mentoring programme** Mentee: Participation in mentoring, training (self-development, leadership, management) and networking
11/2014 – 06/2017	**ROCK YOUR LIFE! Aachen e.V.** mentoring program (middle school students/ university students) promoting educational equity Chairwoman, member of mentoring & network/ funding resort
04/2011 – 03/2016	**Electrical Engineering Students Association, RWTH Aachen University** Elected board member, coordination of several projects (first-year student introduction, graduation ball, Ice hockey Unicup), student representation (committee for studies and teaching, appointment committees)
10/2014 – 09/2015	**University-wide Committees, RWTH Aachen University** Main student representative (Grant commission for ”Förderung des wissenschaftlichen Nachwuchses (RFwN)”)

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Awards

05/2023 2nd price in **Best Poster Competition,** Category *Natural Science*
Contribution: Seitz, J., & **Loh, K.** (2023). A Listening Experiment to Study Intentional Switching of Auditory Selective Attention in Preschool Children. *POSTER 2023, 27th International Student Conference on Electrical Engineering*, Prague, Czech Republic.

03/2021 **Brigitte-Gilles-Award 2020** (Category *External* – promoting interests of female primary school students for STEM) for the initiative *The interactive world of acoustics for young and older children*. Coordination and supervision – **Karin Loh**; Lead – Janina Fels.

05/2018 **EAA Travel Grant for Young Researchers** – Euronoise 2018
Contribution: **Loh, K.**, & Fels, J. (2018). Binaural psychoacoustic parameters describing noise perception of children in comparison to adults. [Invited talk in structured session] *Euronoise 2018*, Hersonissos, Crete, Greece.

05/2017 3rd prize in **Best Poster Competition**, Category *Biomedical Engineering*
Contribution: **Loh, K.** (2017) A concept to compare noise perception by adults and children using aurally accurate measurements. *POSTER 2017, 21th International Student Conference on Electrical Engineering*, Prague, Czech Republic.

Miscellaneous

Languages
- German (mother tongue)
- Cantonese (mother tongue)
- English (fluent in spoken and written)
- Mandarin (good in spoken and written)

Organizations
- German Acoustical Society (DEGA – Deutsche Gesellschaft für Akustik)
- European Acoustics Association (EAA)
- Young Acousticians Network (YAN)

Soft skills
- Experience in leadership and decision-making
- Project management, conceptualization, and execution
- Resources and funding allocation
- Initiative, problem-solving, strategic thinking, self-management
- Communication skills, collaboration, and networking
- Inter-cultural competence
- Inter- & multi-disciplinary project work
- Public relation management (social media & science communication)

Methodical skills
- Experimental and clinical trial management: research protocols, ethics application, and data protection
- Auditory cognition, health, and developmental research
- Analysis of electrophysiological signals
- Indoor acoustic, psychoacoustic and room acoustic assessment
- Statistical data analysis (MS Office, R & SPSS)
- Experienced programming (MATLAB & Python)
- Full command of computer applications (Windows, LaTeX, MS Office, etc.)
- Scientific writing and presentation (LaTEX & MS Office)

Interests & Hobbies
- Travelling
- Working with children and youths

List of publications

Journal publications

Breuer, C., **Loh, K.**, Leist, L., Fremerey, S., Raake, A., Klatte, M., & Fels, J. (2022). Examining the Auditory Selective Attention Switch in a Child-Suited Virtual Reality Classroom Environment. *International Journal of Environmental Research and Public Health*, 19(24). https://doi.org/10.3390/ijerph192416569

Loh, K., Fintor, E., Nolden, S., & Fels, J. (2022). Children's intentional switching of auditory selective attention in spatial and noisy acoustic environments in comparison to adults. *Developmental Psychology*, 58(1), 69–82. https://doi.org/10.1037/dev0001239

Loh, K., Yadav, M., Persson Waye, K., Klatte, M., & Fels, J. (2022). Toward Child-Appropriate Acoustic Measurement Methods in Primary Schools and Daycare Centers. *Frontiers in Built Environment*, 8. https://doi.org/10.3389/fbuil.2022.688847

Guest editorship

Special Issue "Speech Communication in Complex Auditory Scenes and Effects on Voice Behaviour and Health, Listening Comfort, Well-being, and Learning" (2022). *International Journal of Environmental Research and Public Health*. https://www.mdpi.com/journal/ijerph/special_issues/sccas

Conference contributions

Seitz, J., **Loh, K.**, & Fels, J. (2023). Design of a child-appropriate dual-task paradigm examining the influence of different noise conditions on listening effort in adults. [Invited talk in structured session] *Proceeding of Forum Acusticum 2023. Forum Acusticum 2023*, Torino, Italy.
Loh, K., Seitz, J., Braren, H., & Fels, J. (2023). Speech Transmission Index Measured using Adult and Children Head and Torso Simulators. [Invited talk in structured session] *Proceeding of Forum Acusticum 2023. Forum Acusticum 2023*, Torino, Italy.
Abi Raad, E., Argotti, M., Duran, S., Fasllija, E., Lobato, T., **Loh, K.**, McLachlan, G., Pereira, D., & Puglisi, G. (2023). Three Years of EAA's Young Acousticians Network in Social Media. [Invited talk in structured session] *Proceeding of Forum Acusticum 2023. Forum Acusticum 2023*, Torino, Italy.
Loh, K., Seitz, J., Rust, F., & Fels, J. (2023). A concept to evaluate activity-based acoustic settings in preschools for children aged three to six. *Proceedings of Inter-Noise 2023. Inter-noise 2023*, Chiba, Japan.
Seitz, J., & **Loh, K.** (2023). A Listening Experiment to Study Intentional Switching of Auditory Selective Attention in Preschool Children. *POSTER 2023, 27th International Student Conference on Electrical Engineering*,Prague, Czech Republic.
Seitz, J., **Loh, K.**, Nolden, S., & Fels, J. (2023). Investigating Intentional Switching of Spatial Auditory Selective Attention in an Experiment with Preschool children. *Fortschritte Der Akustik - DAGA 2023. DAGA 2023*, Hamburg, Germany.
Rust, F., **Loh, K.**, Aspöck, L., & Fels, J. (2023). Einfluss lärmakustischer Maßnahmen auf das Lärmempfinden im Klassenraum. *Fortschritte Der Akustik - DAGA 2023. DAGA 2023*, Hamburg, Germany.
Loh, K., Fintor, E., Nolden, S., & Fels, J. (2023). Comparing Children's and Adults' Intentional Switching of Auditory Selective Attention in Spatial and Noisy Acoustic Environments. *Fortschritte Der Akustik - DAGA 2023. DAGA 2023*, Hamburg, Germany.
Loh, K. & Fels, J. (2022). Challenges and methods to design a dual-task experiment in spatial auditory environments for young children aged three to six years old. *Fortschritte Der Akustik - DAGA 2022. DAGA 2022*, Stuttgart, Germany.
Reimers, C., **Loh, K.**, Leist, L., Fremerey, S., Raake, A., Klatte, M. & Fels, J. (2022). Investigating Different Cueing Methods for Auditory Selective Attention in Virtual Reality. *Fortschritte Der Akustik - DAGA 2022. DAGA 2022*, Stuttgart, Germany.

Fels, J., & **Loh, K.** (2022). Challenges and methods to design a child-appropriate speech-in-noise experiment in spatial auditory environments for young children. [Invited talk] *SPIN 2022*, Virtual meeting.
Reimers, C., **Loh, K.**, Leist, L., Fremerey, S., Raake, A., Klatte, M., & Fels, J. (2021). Examining Auditory Selective Attention in a Classroom Setting using Audiovisual Virtual Reality. *Fortschritte Der Akustik - DAGA 2021. DAGA 2021*, Vienna, Austria. https://doi.org/10.18154/RWTH-2021-09375
Loh, K., Hoog Antink, C., Nolden, S., & Fels, J. (2021). Combined assessment of cognitive and physiological parameters in child-appropriate listening experiments. [Invited talk in structured session] *Euronoise 2021, e-congress*, Madeira, Portugal.
Loh, K., & Fels, J. (2021). A concept to evaluate activity-based acoustic settings in primary schools appropriate for children's hearing. [Invited talk in structured session] *13th ICBEN Congress on Noise as a Public Health Problem*, Stockholm, Sweden.
Laufs, C., Herweg, A., **Loh, K.**, & Fels, J. (2021). Relationship between the psychoacoustic parameter sharpness and the physiological parameter skin conductance for the assessment of extra-aural noise effects. *Fortschritte Der Akustik - DAGA 2021. DAGA 2021*, Vienna, Austria.
Loh, K. L., Hoog Antink, C., Mayer, L., & Fels, J. (2020). Child-appropriate experiment on auditory selective attention in a virtual acoustic environment. *Fortschritte Der Akustik - DAGA 2020, DAGA 2020*, Hannover, Germany.
Fels, J., Oberem, J., **Loh, K.**, & Viveros Muñoz, R. A. (2020). Novel approaches towards more 'real-life' listening experiments in complex acoustic scenes. [Invited talk in structured session] *e-Forum Acusticum 2020*, Lyon, France. https://doi.org/10.48465/fa.2020.0139
Nolden, S., **Loh, K.**, & Fels, J. (2019). Cognitive control of auditory attention in preschool children. [Invited talk structured session] *Symposium on (musical) auditory scene analysis*, Delmenhorst, Germany.
Loh, K., Nolden, S., & Fels, J. (2019). Evaluation of an experiment on intentional switching of auditory selective attention for children. [Invited talk in structured session] *EFAS 2019*, Lisbon, Portugal.

Loh, K., Kurz, E., & Fels, J. (2019). Objective and Subjective Assessment of Acoustics in Open-Plan Offices. [Invited talk in structured session] *Proceedings of the 23rd International Congress on Acoustics. ICA 2019*, Aachen, Germany.
Loh, K., Fintor, E., Nolden, S., & Fels, J. (2019). Comparing Intentional Switching of Auditory Selective Attention in Children and Adults in an Experiment Suited for Children. [Invited talk in structured session] *Proceedings of the 23rd International Congress on Acoustics. ICA 2019*, Aachen, Germany.
Loh, K., & Fels, J. (2019). The influence of stimuli length in an experiment on auditory selective attention for children. *Fortschritte Der Akustik - DAGA 2019. DAGA 2019*, Rostock, Germany.
Loh, K., & Fels, J. (2019). Speech Perception of Children and Adults in a Dual-Task Paradigm under Noisy Conditions. [Invited talk in structured session] *Proceedings of the 48th International Congress on Noise Control Engineering, INTER-NOISE 2019*, Madrid, Spain.
Loh, K., Pausch, F., & Fels, J. (2018). Classification of Rooms in Educational Buildings using different Noise Indicators. *Fortschritte Der Akustik - DAGA 2018. DAGA 2018*, Munich, Germany.
Loh, K., & Fels, J. (2018). Binaural psychoacoustic parameters describing noise perception of children in comparison to adults. [Invited talk in structured session] *Euronoise 2018*, Hersonissos, Crete, Greece.
Loh, K. (2017) A concept to compare noise perception by adults and children using aurally accurate measurements. *POSTER 2017, 21st International Student Conference on Electrical Engineering*, Prague, Czech Republic.

Databases

Loh, K., & Fels, J. (2023). ChildASA dataset: Speech and Noise Material for Child-appropriate Paradigms on Auditory Selective Attention. [Database] https://doi.org/10.18154/RWTH-2023-00740
Loh, K., Burger, J., Aspöck, L., & Fels, J. (2021). EduRa database: Room models based on room acoustic measurements in primary and preschools. [Database] https://doi.org/10.18154/RWTH-2021-07429
Loh, K. & Fels, J. (2020). English Speech Material for a Paradigm on Intentional Switching of Auditory Selective Attention. [Database] https://doi.org/10.18154/RWTH-2020-08540