

YUANBO HOU ✉ [YUANBO.HOU@UGENT.BE](mailto:YUANBO.HOU@UGENT.BE)

[Homepage](#) [Google Scholar](#) [ResearchGate](#)

Full Scholarship Ph.D. recipient, Ghent University, Belgium.

## RESEARCH INTERESTS

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Advancing machine listening: understanding acoustic scenes and events and the emotions they evoke. My research topics include environmental sound event detection, real-life audio-visual scene recognition, audio-visual singing voice detection, and sound-related affective computing.

## EDUCATION

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**Post-doctoral Researcher** Oct. 2024 — Now  
*WAVES Research Group, FEA, Ghent University, Belgium* Supervisor: Prof. Dick Botteldooren

**Honorary Research Assistant** Nov. 2022 — Mar. 2023  
*The Bartlett School of Environment, Energy and Resources, University College London (UCL), UK*  
Supervisor: Prof. Jian Kang

**Full scholarship Ph.D. student in Computer Science Engineering** Oct. 2020 — Sep. 2024  
*WAVES Research Group, Faculty of Engineering and Architecture (FEA), Ghent University, Belgium*  
Supervisor: Prof. Dick Botteldooren

**Master of Electronics Science and Technology** Sept. 2016 — Jun. 2020  
*Beijing University of Posts and Telecommunications (BUPT), China* Supervisor: Prof. Shengchen Li, Prof. Ming Liu

## AWARD

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- Doctor of Computer Science Engineering, Ghent University, Belgium Sep. 2024
- Chinese Government Award for Outstanding Self-financed Students Abroad July. 2024  
(Recipients are chosen worldwide among all Chinese overseas graduate students for their outstanding accomplishments in academia; only up to 600 are awarded each year.)
- China National Scholarship Oct. 2014
- BUPT Honorary Scholarship Feb. 2019
- BUPT Scholarship for Postgraduate Studies Oct. 2016; Oct. 2017; Oct. 2018

## PROFESSIONAL EXPERIENCE

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**Research intern at Speech Research Group, Supervisor: Prof. Frank K. Soong** Jul. 2018 – Jun. 2019  
*Microsoft Research Asia (MSRA)* Beijing, China

- Microsoft Xiaolce is an AI system that loves to sing. To better interact with users, Xiaolce needs to evaluate people's songs and understand real-life acoustic scenes. My research aims to detect the endpoints of singing voice in polyphonic songs.
- Outcome: one patent copyrighted by Microsoft (OBTAINING A SINGING VOICE DETECTION MODEL, patent ID: CN112309428A), and one paper accepted by INTERSPEECH 2020.

**Research intern at Music Research Group, Supervisor: Dr. Bilei Zhu** Nov. 2019 – Oct. 2020  
*ByteDance AI Lab* Shanghai, China

- In live musical streams, an anchor is a person who speaks to the audience or sings in front of the camera while playing other music. This internship explores the feasibility of audio-visual singing voice detection in live video streams.
- Outcome: one paper accepted by ICASSP 2021, and another paper accepted by INTERSPEECH 2021.

## PUBLICATIONS

[GOOGLE SCHOLAR](#)

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### Journal

1. **IEEE TASLP:** Y. Hou, B Kang, A Mitchell, W Wang, J Kang, D Botteldooren, "Cooperative Scene-Event Modelling for Acoustic Scene Classification".

2. **IEEE SPL:** Y. Hou, S Song, C Yu, W Wang, D Botteldooren, “Audio Event-Relational Graph Representation Learning for Acoustic Scene Classification”.
3. **JASA:** Y. Hou, Q Ren, H Zhang, A Mitchell, F Aletta, J Kang, D Botteldooren, “AI-based soundscape analysis: Jointly identifying sound sources and predicting annoyance”.
4. **IEEE Robotics and Automation Letters:** Q Ren, Y. Hou, D Botteldooren, T Belpaeme, “No More Mumbles: Enhancing Robot Intelligibility Through Speech Adaptation”.
5. **JASA:** A. Mitchell, E. Brown, R. Deo, Y. Hou, “Deep learning techniques for noise annoyance detection: Results from an intensive workshop at the Alan Turing Institute”.
6. **Sensors:** Q Ren, Y. Hou, D Botteldooren, T Belpaeme, “Behavioural Models of Risk-Taking in Human–Robot Tactile Interactions”.
7. **Applied Acoustics:** A. Talebzadeh, D. Botteldooren, T. Van Renterghem, P. Thomas, D. Van de Velde, P. De Vriendt, Y. Hou, P. Devos, “Sound augmentation for people with dementia: Soundscape evaluation based on sound labelling”.

### *Selected Conference*

1. **IEEE ICASSP 2024:** Y. Hou, Q Ren, S Song, Y Song, W Wang, & D. Botteldooren, “Multi-level graph learning for audio event classification and human-perceived annoyance rating prediction”.
2. **AAAI 2024:** Q Lin, C Luo, Z Niu, X He, W Xie, Y. Hou, L Shen, S Song, “Boosting Adversarial Transferability across Model Genus by Deformation-Constrained Warping”.
3. **IEEE ICASSP 2023:** Y. Hou, Y. Wang, W. Wang, D. Botteldooren, “GCT: Gated Contextual Transformer for Sequential Audio Tagging”.
4. **INTERSPEECH 2023:** Y. Hou, S Song, C Luo, A Mitchell, Q Ren, W Xie, J Kang, W Wang, D. Botteldooren, “Joint Prediction of Audio Event and Annoyance Rating in an Urban Soundscape by Hierarchical Graph Representation Learning”.
5. **ACM/IEEE HRI 2023:** Q Ren, Y. Hou, T. Belpaeme, “Low-latency Classification of Social Haptic Gestures Using Transformers”.
6. **ICONIP 2023:** Z Liu, Y. Hou, H Tang, Á López-Chilet, S Michiels, D Botteldooren, “CLF-AIAD: A Contrastive Learning Framework for Acoustic Industrial Anomaly Detection”.
7. **IEEE MMSP 2022:** Y. Hou, B. Kang & D. Botteldooren, “Audio-visual scene classification via contrastive event-object alignment and semantic-based fusion”.
8. **INTERSPEECH 2022:** Y. Hou, Z. Liu, B. Kang, Y. Wang & D. Botteldooren, “CT-SAT: Contextual Transformer for Sequential Audio Tagging”.
9. **INTERSPEECH 2022:** Y. Hou, & D. Botteldooren, “Event-related data conditioning for acoustic event classification”.
10. **IJCNN 2022:** Y. Hou, B. Kang, W. Hauwermeiren, & D. Botteldooren, “Relation-guided acoustic scene classification aided with event embeddings”.
11. **IEEE ICASSP 2021:** Y. Hou, Y. Deng, B. Zhu, Z. Ma, & D. Botteldooren, “Rule-embedded network for audio-visual voice activity detection in live musical video streams”.
12. **INTERSPEECH 2021:** Y. Hou, Z. Yu, X. Liang, X. Du, B. Zhu, Z. Ma, & D. Botteldooren, “Attention-based cross-modal fusion for audio-visual voice activity detection in musical video streams”.

### REVIEWER

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- IEEE/ACM Transactions on Audio Speech and Language Processing (TASLP)
  - IEEE Internet of Things Journal (IoT)
  - IEEE Transactions on Systems, Man, and Cybernetics: Systems (SMC: Systems)
  - Journal of the Acoustical Society of America (JASA)
  - IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)
  - Conference of the International Speech Communication Association (INTERSPEECH)
  - IEEE International Workshop on Machine Learning for Signal Processing (MLSP)

- IEEE International Joint Conference on Neural Networks (IJCNN)
- IEEE Conference on Artificial Intelligence (IEEE CAI)