# Dr. Beici Liang

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Sweden

- Audio technologist experienced in DSP, AI, Information Retrieval, and Software Development
- Skilled in Python, SQL, Docker, Kubernetes, Cloud Engineering, and other DevOps
- Passionate about introducing music tech to the public as a Popular Science Writer
- Good communication and presentation skills in English and Chinese

## Working Experience

Aug. 2024 – now
**Signal Processing Engineer**
Epidemic Sound, Sweden
Lead the design and implementation of algorithms for music recognition, facilitating digital rights management.

Sep. 2023 – July. 2024
**Senior Backend and Cloud Engineer**
Nomono AS, Norway
Responsible for the backend development of Nomono Cloud to build a robust, scalable and high-performing cloud service that provides great audio processing and editing for content creators.

May 2021 – Aug. 2023
**Head of R&D**
Music Tech Startups including SPARWK AS and Deus Vault UK Ltd.
Developed AI algorithms for music entity linking system and audio-based information retrieval services, e.g., genre detection, tempo estimation, etc.; Filed 4 patents for the systems and methods used in artists and repertoire (A&R).

Sept. 2019 – April 2021
**Senior Research Engineer**
Tencent Music Entertainment (TME), China
Developed end-to-end AI models for music auto-tagging, structural segmentation, large scaled singer recognition, and audio embeddings for music recommendation; Provided a better understanding of the music content for over 20 million tracks, and benefited over 800 million users in China via the QQ Music App; Published 5 conference papers and 3 patents, and awarded with the Annual Technology Breakthrough.

## Education

2014 – 2019
**PhD in Media and Arts Technology**
School of Electronic Engineering and Computer Science
Queen Mary University of London (QMUL), United Kingdom
Research Group: Centre for Digital Music (C4DM)
Supervisors: Mark Sandler, George Fazekas, Andrew McPherson
Thesis: Modelling Instrumental Gestures and Techniques - A Case Study of Piano Pedalling

2010 – 2014
**BEng in Integrated Circuit Design and Integrated System**
School of Electronic Information Engineering
Tianjin University (TJU), China
Grade: 88/100

## Open-source Projects

2023 – now **aws-bootcamp-cruddur-2023**
Implementations for a micro-blogging platform using React, Flask and AWS.

2018 – now **intro2musictech**
Introduce music technology to Chinese audiences and build MIR communities in China. 12k+ followers on Zhihu and 2k+ subscribers on WeChat Official Account.

2018 – 2019 **sustain-pedal-detection**
Python implementations for piano sustain pedal detection.

2018 **modelAttackDecay-for-piano-transcription**
Python implementations of an attack/decay model for piano transcription.

## Miscellaneous

### Volunteers

- Scientific Program Chair of the 24th International Society for Music and Information Retrieval Conference (ISMIR 2023)
- Mentor and volunteer for Women in Music Information Retrieval (WiMIR)
- Member of the Local Organising Committee for the 12th International Audio Mostly Conference
- Reviewers and memberships in numerous international conferences and journals such as ISMIR, IEEE Signal Processing Society, Audio Engineering Society, etc.

### Main Publications

More can be seen at Google Scholar.

2021 K. Chen, **Liang, B**, X. Ma, and M. Gu. "Learning Audio Embeddings with User Listening Data for Content-Based Music Recommendation". In: *2021 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*. pp. 3015-3019. doi:10.1109/ICASSP39728.2021.9414458.

2021 S. Hu, **Liang, B**, Z. Chen, X. Lu, E. Zhao, and S. Lui. "Large-Scale Singer Recognition Using Deep Metric Learning: An Experimental Study". In: *2021 International Joint Conference on Neural Networks (IJCNN)*. pp. 1–6. doi:10.1109/IJCNN52387.2021.9533911.

2020 S. Hu, B. Zhang, **Liang, B**, E. Zhao, and S. Lui. "Phase-Aware Music Super-Resolution Using Generative Adversarial Networks". In: *Interspeech 2020*. pp. 4074–4078. doi:10.21437/Interspeech.2020-2605.

2019 **Liang, B**, G. Fazekas, and M. Sandler. "Transfer Learning for Piano Sustain-Pedal Detection". In: *2019 International Joint Conference on Neural Networks (IJCNN)*. pp. 1-6. doi:10.1109/ijcnn.2019.8851724.

2019 **Liang, B**, G. Fazekas, and M. Sandler. "Piano Sustain-Pedal Detection Using Convolutional Neural Networks". In: *2019 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*. pp. 241-245. doi:10.1109/ICASSP.2019.8683505.

2018 **Liang, B**, G. Fazekas, and M. Sandler. "Measurement, Recognition, and Visualization of Piano Pedalling Gestures and Techniques". *Journal of the Audio Engineering Society* 66.6 (2018), pp. 448-456. doi:10.17743/jaes.2018.0035.