

Beici Liang

PHD · AMATEUR PIANIST · MUSIC TECHNOLOGIST

✉ liangbeici@gmail.com 🏠 beiciliang.github.io 📧 beiciliang 🌐 beiciliang

Experience

Technical Lead

DEUS VAULT UK LTD.

EMEA Remote

May 2021 - Oct. 2021

- Develop APIs for content-based music identification
- Responsible for collaborations with academia

Senior Research Engineer

QQ MUSIC BU, TENCENT MUSIC ENTERTAINMENT

Shenzhen, China

Sept. 2019 - April 2021

- Implement algorithms of music information retrieval (MIR) for different services
- Develop audio embeddings to solve cold-start problems in music recommendation
- Deploy end-to-end systems for music auto-tagging, structural segmentation, etc.
- Publish papers and patents on music AI (related publications in [1-5])

Popular Science Writer

FREELANCER

Online

July 2018 - Present

- Introduce music technology at WeChat Official Account "intro2musictech" and Zhihu Website (in Chinese)
- Build MIR communities in China to socialize and share information

Education

Queen Mary University of London

DOCTOR OF PHILOSOPHY

London, UK

Sept. 2014 - Nov. 2019

- Thesis: Modelling Instrumental Gestures and Techniques - A Case Study of Piano Pedalling
- Programme: Media and Arts Technology Centre for Doctoral Training (MAT CDT)
- Research Group: Centre for Digital Music (C4DM)
- Supervisors: Mark Sandler, György Fazekas, Andrew McPherson
- Team Member of "Fusing Audio and Semantic Technologies for Intelligent Music Production and Consumption" (FAST-IMPACT) Project
- Research is supported by China Scholarship Council (CSC), EPSRC & AHRC Grant EP/L01632X/1, EPSRC Grant EP/L019981/1 and AudioCommons (688382).

Tianjin University

BACHELOR OF ENGINEERING

Tianjin, China

Sept. 2010 - July 2014

- Major: Integrated Circuit Design and Integrated System
- Grade: 88/100
- Activities: Alto at Peiyang Chorus; Piano Teacher at Keyboard Training Centre

Skill

Interests Music Information Retrieval, Audio Signal Processing, Machine Learning and Deep Learning

Programming Python (Pytorch, Tensorflow), Matlab, Bash, Spark, MySQL

Tools Docker, Git, Google Cloud Computing, Linux & Unix Environments, \LaTeX , Adobe Creative Suite, Laser Cutting

Languages Chinese, English

Award

2020-25 **Overseas High-Caliber Personnel**, awarded by Shenzhen Municipal Government

Shenzhen, China

Jan. 2021 **Annual Technology Breakthrough**, awarded by Tencent Music Entertainment

China

2014-18 **Chinese Government Scholarship**, awarded by China Scholarship Council

China

Jul. 2018 **Full Tuition Scholarship**, CCRMA Summer Workshops at Stanford University

Stanford, USA

Oct. 2017 **WiMIR Award**, 18th International Society for Music Information Retrieval Conference

Suzhou, China

Aug. 2017 **Best Poster Award**, 12th International Audio Mostly Conference

London, UK

Jul. 2014 **Distinguished Graduate Award**, Tianjin University

Tianjin, China

Academic Experience

2017-now	Reviewer/Sub-Reviewer , ISMIR, DAFx, CSMT, IEEE Transactions on Affective Computing	Online
2015-18	Teaching Assistant , Research Methods, The Semantic Web, Interactive Digital Media Techniques, Digital Signal Processing	QMUL, UK
Jul. 2018	Summer Workshop Student , Deep Learning for Music Information Retrieval I & II at Center for Computer Research in Music and Acoustics (CCRMA), Stanford University	Stanford, USA
2012-14	Piano Teacher , Keyboard Training Centre of Tianjin University	Tianjin, China

Publication

- [1] Shichao Hu, **Beici Liang**, Zhouxuan Chen, Xiao Lu, Ethan Zhao, Simon Lui. "Large-scale Singer Recognition using Deep Metric Learning", in *Proceedings of the IEEE International Joint Conference on Neural Networks (IJCNN)*, 2021.
- [2] Ke Chen, **Beici Liang**, Xiaoshuan Ma, Minwei Gu. "Learning Audio Embeddings with User Listening Data for Content-based Music Recommendation", in *Proceedings of the IEEE International Conference on Audio, Speech and Signal Processing (ICASSP)*, Toronto, Canada, 2021.
- [3] Shichao Hu, Bin Zhang, **Beici Liang**, Ethan Zhao, Simon Lui. "Phase-aware Music Super-Resolution Using Generative Adversarial Networks", in *Proceedings of INTERSPEECH*, 2020.
- [4] **Beici Liang**, Zonghan Cai, Quan Chen, Yifan Li, Minwei Gu. "Novel Audio Embeddings for Personalized Recommendations on Newly Released Tracks", in *Machine Learning for Media Discovery Workshop at the International Conference on Machine Learning (ICML)*, 2020.
- [5] **Beici Liang**, Minwei Gu. "Music Genre Classification Using Transfer Learning", demo paper for *Workshop on Artificial Intelligence for Art Creation at the IEEE International Conference on Multimedia Information Processing and Retrieval (MIPR)*, 2020.
- [6] **Beici Liang**, György Fazekas, Mark Sandler. "Transfer Learning for Piano Sustain-Pedal Detection", in *Proceedings of IJCNN*, Budapest, Hungary, 2019.
- [7] **Beici Liang**, György Fazekas, Mark Sandler. "Piano Sustain-Pedal Detection Using Convolutional Neural Networks", in *Proceedings of ICASSP*, Brighton, UK, 2019.
- [8] **Beici Liang**, György Fazekas, Mark Sandler. "Piano Legato-Pedal Onset Detection based on a Sympathetic Resonance Measure", in *Proceedings of the 26th European Signal Processing Conference (EUSIPCO)*, Rome, Italy, 2018.
- [9] **Beici Liang**, György Fazekas, Mark Sandler. "Measurement, Recognition and Visualisation of Piano Pedalling Gestures and Techniques", *Journal of the Audio Engineering Society*, vol.66 no.6 pp. 448-456, 2018.
- [10] **Beici Liang**, György Fazekas, Mark Sandler. "Towards the Detection of Piano Pedalling Techniques from Audio Signal", extended abstracts for the *Late-Breaking Demo Session of the 18th International Society for Music Information Retrieval Conference (ISMIR)*, Suzhou, China, 2017.
- [11] **Beici Liang**, György Fazekas, Mark Sandler. "Detection of Piano Pedalling Techniques on the Sustain Pedal", in *Proceedings of the 143rd Convention of Audio Engineering Society*, New York, USA, 2017.
- [12] **Beici Liang**, György Fazekas, Mark Sandler. "Recognition of Piano Pedalling Techniques Using Gesture Data", in *Proceedings of the 12th International Audio Mostly Conference*, London, UK, 2017.
- [13] **Beici Liang**, György Fazekas, Andrew McPherson and Mark Sandler. "Piano Pedaller: A Measurement System for Classification and Visualisation of Piano Pedalling Techniques", in *Proceedings of the International Conference on New Interfaces for Musical Expression (NIME)*, Copenhagen, Denmark, 2017.
- [14] **Beici Liang**. "Introduction of Centre for Digital Music", *Entertainment Technology*, vol.5 pp.57-58, 2016. (in Chinese)
- [15] **Beici Liang**. "Introduction of Augmented Instruments", *Entertainment Technology*, vol.4 pp.44-46, 2016. (in Chinese)
- [16] **Beici Liang**, György Fazekas, Mark Sandler. "The Organ Web App", extended abstracts for the *Late-Breaking Demo Session of the 16th ISMIR*, Malaga, Spain, 2015.