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Department of Electrical Engineering
National Taiwan University

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EXPERTISE

Music information research; Artificial intelligence; Machine learning; Music generation

EDUCATION

- Ph.D., Communication Engineering, National Taiwan University, Taiwan 2010
- B.S., Electrical Engineering, National Taiwan University, Taiwan 2006

WORK EXPERIENCES

- **Full Professor**, Dept. Electrical Engineering, National Taiwan University **since 2023/02**
- **Chief Music Scientist**, Taiwan AI Labs **2019-2023**
- **Associate Research Professor**, Research Center for IT Innovation, Academia Sinica **2015-2023**
- Joint-Appointment Associate Professor, CSIE, National Cheng Kung University 2017-2019
- Adjunct Associate Professor, CSIE, National Tsing-Hua University 2016
- **Assistant Research Professor**, Research Center for IT Innovation, Academia Sinica **2011-2015**
- Visiting Scholar (three months), Columbia University, USA 2013
- Visiting Scholar (three months), Music Technology Group, Universitat Pompeu Fabra, Spain 2011
- Second Lieutenant (one year), Communications, Electronics and Information, ROC Army 2010-2011

AWARDS & HONORS

- Multimedia Rising Stars Award, IEEE International Conference on Multimedia Expo. (ICME) 2019
- Best Associate Editor Service Award, IEEE Transactions on Multimedia 2018
- Best Conference Paper Award, IEEE Multimedia Communications Technical Committee (MMTC) 2015
- Best Paper Award, IEEE International Conference on Multimedia Expo. (ICME) 2015
- Young Scholars' Creativity Award, Foundations for the Advancement of Outstanding Scholarship 2015
- Ta-You Wu Memorial Research Award, Ministry of Science and Technology 2014
- Best Poster Award, IEEE/ACM Joint Conference on Digital Libraries 2014

- Project for Excellent Junior Research Investigators, National Science Council 2013–2016
- Career Development Award, Academia Sinica 2013–2017
- Pan Wen Yuan Research Exploration Award 2013
- First Prize, ACM Multimedia Grand Challenge 2012
- IEEE SPS Young Author Best Paper Award, IEEE Signal Processing Society 2011
- Best Ph.D. Dissertation Award, Graduate Institute of Communication Engineering, NTU 2010
- Best Ph.D. Dissertation Award, TAAI (Taiwanese Association for Artificial Intelligence) 2010
- MediaTek Fellowship 2009
- Microsoft Research Asia (MSRA) Fellowship 2008

SELECTED RECENT PUBLICATIONS

- “MuseMorphose: Full-song and fine-grained piano music style transfer with just one Transformer VAE,” *TASLP* 2023.
- “Relative positional encoding for Transformers with linear complexity,” *ICML* 2021.
- “Compound Word Transformer: Learning to compose full-song music over dynamic directed hypergraphs,” *AAAI* 2021.
- “Pop Music Transformer: Beat-based modeling and generation of expressive Pop piano compositions,” *ACM Multimedia* 2020.
- “Dilated convolution with dilated GRU for music source separation,” *IJCAI* 2019.
- “Musical composition style transfer via disentangled timbre representations,” *IJCAI* 2019.
- “Score-to-audio music generation with multi-band convolutional residual network,” *AAAI* 2019.
- “Learning to recognize transient sound events using attentional supervision,” *IJCAI* 2018.
- “MuseGAN: Multi-track sequential GAN for symbolic music generation and accompaniment,” *AAAI* 2018.
- “Generating music medleys via playing music puzzle games,” *AAAI* 2018
- “MidiNet: A convolutional GAN for symbolic-domain music generation,” *ISMIR* 2017
- *Music Emotion Recognition*, CRC Taylor & Francis Books, Feb. 2011.

ACADEMIC SERVICES

- **Associate Editor** of
 - IEEE Transactions on Multimedia 2016/9-2019/2
 - IEEE Transactions on Affective Computing 2016/11-2019/2
- **IEEE Senior Member** since 2017
- **Program Chair** of
 - Int. Society for Music Information Retrieval Conference (ISMIR) 2014
- **Guest Editor** of
 - ACM Transactions on Intelligent Systems and Technology 2015
 - IEEE Transactions on Affective Computing 2014
- **10K Award Committee Member** of

IEEE International Conference on Multimedia and Expo. (ICME)	2016–2018
• Tutorial Chair of	
Int. Society for Music Information Retrieval Conference (ISMIR)	2021
• Unconference Chair of	
Int. Society for Music Information Retrieval Conference (ISMIR)	2017
• External PhD thesis committee member of	
Hong Kong University of Science and Technology	2015
• Senior PC Member (Meta-reviewer) of	
AAAI 2022, ISMIR 2021, etc	
• Organizer of	
Int. Workshop on Affect and Sentiment in Multimedia, in conjunction with ACM MM	2015
MediaEval Affect Task: Music in Emotion	2013–2015
MIREX Singing Voice Separation Task	2014–2015
Int. Workshop on Affective Analysis in Multimedia, in conjunction with IEEE ICME	2013
Taiwanese Workshop on Music Information Retrieval	2012–2014

PROJECTS

• Human-level and Open-Source Mandarin Pop Music Melody and Singing Generation by AI	MOST 2023-2025
• Open DJ Project (II): Automatic EDM Generation	MOST 2020-2022
• GenMusic Project: Industrial AI-Powered Music Composition Platform	MOST 2018-2020
• Open DJ Project: AI for Automatic and Personalized DJing	MOST 2018-2020
• A Unified Framework for Processing and Understanding Heterogeneous Data for Intelligent Recommendation (co-PI)	MOST 2017-2020
• Product Recommendation and Customer Status Prediction	Cathay 2017-2018
• Online Guitar Transcription: Melody, Chord and Playing Techniques Recognition	MOST 2016-2018
• Mobile Music Recommendation using Brain-Computer Interfaces	MOST 2015-2018
• User-centered Intelligent Music Streaming and Recommendation Platform (III)	KKBOX Inc., 2017-2019
• User-centered Intelligent Music Streaming and Recommendation Platform (II)	KKBOX Inc., 2015-2017
• User-centered Intelligent Music Streaming and Recommendation Platform	KKBOX Inc., 2013-2015
• User Preference Modeling from Listening History & Artist Similarity	KKBOX Inc., 2012-2013
• Music Recommendation based on Listening Context	HTC Inc., 2012
• Dictionary-based Music Signal Analysis, Understanding, and Retrieval	Academia Sinica, 2013-2017
• Automatic Music Recommendation and Retrieval	MOST 2013-2016
• Dictionary-based Multipitch Estimation of Polyphonic Music	NSC 2012-2013
• Large-scale Music Emotion Recognition System using Social Media	NSC 2011-2012

TUTORIALS

- Hao-Wen Dong and **Yi-Hsuan Yang**, "Generating Music with GANs: An Overview and Case Studies," *Int. Society for Music Information Retrieval Conference (ISMIR)*, 2019 ([link](#)).
- Xiao Hu and **Yi-Hsuan Yang**, "Music Affect Recognition: The State-of-the-art and Lessons Learned," *Int. Society for Music Information Retrieval Conference (ISMIR)*, 2012.

STUDENT AWARDS

- Yi-Jen Shih, 1st Prize, Bachelor Thesis Award, Dept. of EE, NTU 2022
- Shih-Lun Wu, Ssu-Nien Fu's Award (1st Prize), Best Bachelor's Thesis, National Taiwan University 2021
- Shih-Lun Wu, 1st Prize, Bachelor Thesis Award, Dept. of CSIE, NTU 2021
- Yi-Hui Chou, 2nd Prize, Bachelor Thesis Award, Dept. of EE, NTU 2021
- Shih-Lun Wu, 1st Prize, Bachelor Thesis Award, Dept. of CSIE, NTU 2020
- Ching-Yu Chiu, Jury's Recommendation Award, 美律電聲論文獎 2021
- Yu-Hsiang Huang, Special Award, 美律電聲論文獎 2020
- Wen-Yi Hsiao, 2nd Prize, 美律電聲論文獎 2018

PUBLICATIONS

Total citations: 9186; citations of most-cited paper: 588; h-index: 47; i10-index: 162

• Book

- [1] Y.-H. Yang and H. H. Chen, *Music Emotion Recognition*, CRC Taylor & Francis Books, Feb. 2011.

• Proceedings (Edited)

- [2] Meinard Müller, Emilia Gómez, and Yi-Hsuan Yang, "Computational methods for melody and voice processing in music recordings," Report from Dagstuhl Seminar 19052, 2019.
- [3] Hsin-Min Wang, Yi-Hsuan Yang, and Jin Ha Lee, *International Society for Music Information Retrieval Conference, Proceedings, ISMIR, Taipei, Taiwan, 2014*.

• Journal Papers

- [4] Ching-Yu Chiu, Meinard Müller, Matthew E. P. Davies, Alvin Wen-Yu Su, and Yi-Hsuan Yang, "Local periodicity-based beat tracking for expressive classical piano music," *IEEE/ACM Transactions on Audio, Speech, and Language Processing (TASLP)*, vol. 31, pp. 2824-2835, July 2023.
- [5] Shih-Lun Wu and Yi-Hsuan Yang, "MuseMorphose: Full-song and fine-grained piano music style transfer with just one Transformer VAE," *IEEE/ACM Transactions on Audio, Speech, and Language Processing (TASLP)*, vol. 31, pp. 1953-1967, May 2023.
- [6] Ching-Yu Chiu, Meinard Müller, Matthew E. P. Davies, Alvin Wen-Yu Su, and Yi-Hsuan Yang, "An analysis method for metric-level switching in beat tracking," *IEEE Signal Processing Letters (SPL)*, vol. 29, pp. 2153-2157, Oct. 2022.
- [7] Yi-Jen Shih, Shih-Lun Wu, Frank Zalkow, Meinard Müller, and Yi-Hsuan Yang, "Theme Transformer: Symbolic music generation with theme-conditioned Transformer," *IEEE Transactions on Multimedia (TMM)*, accepted for publication.

- [8] Juan Sebastián Gomez-Cañón, Estefanía Cano, Tuomas Eerola, Perfecto Herrera, Xiao Hu, Yi-Hsuan Yang, and Emilia Gómez, "Music Emotion Recognition: Towards new robust standards in personalized and context-sensitive applications," *IEEE Signal Processing Magazine*, vol. 38, no. 6, pp. 106-114, Nov. 2021.
- [9] Ching-Yu Chiu, Alvin Wen-Yu Su, and Yi-Hsuan Yang, "Drum-aware ensemble architecture for improved joint musical beat and downbeat tracking," *IEEE Signal Processing Letters (SPL)*, vol. 28, pp. 1100-1104, May 2021.
- [10] Yin-Cheng Yeh, Wen-Yi Hsiao, Satoru Fukayama, Tetsuro Kitahara, Benjamin Genchel, Hao-Min Liu, Hao-Wen Dong, Yian Chen, Terence Leong, and Yi-Hsuan Yang, "Automatic melody harmonization with triad chords: A comparative study," *Journal of New Music Research*, vol. 50, no. 1, pp. 37-51, 2021.
- [11] E. Zangerle, C.-M. Chen, M.-F. Tsai and Y.-H. Yang, "Leveraging affective hashtags for ranking music recommendations," *IEEE Transactions on Affective Computing (TAC)*, vol. 12, no. 1, pp. 78-91, 2021.
- [12] Zhe-Cheng Fan, Tak-Shing T. Chan, Yi-Hsuan Yang, and Jyh-Shing R. Jang, "Backpropagation with N -D vector-valued neurons using arbitrary bilinear products," *IEEE Transactions on Neural Networks and Learning Systems (TNNLS)*, vol. 31, no. 7, pp. 2638-2652, 2020.
- [13] T.-W. Su, Y.-P. Chen, L. Su, and Y.-H. Yang, "TENT: Technique-embedded note tracking for real-world guitar solo recordings," *Transactions of the International Society for Music Information Retrieval (TISMIR)*, vol. 2, no. 1, pp. 15-28, 2019.
- [14] S.-Y. Chou, J.-S. R. Jang, and Y.-H. Yang, "Fast tensor factorization for large-scale context-aware recommendation from implicit feedback," *IEEE Trans. Big Data (TBD)*, vol. 6, no. 1, pp. 201-208, Mar. 2020.
- [15] J.-Y. Liu, Y.-H. Yang, and S.-K. Jeng, "Weakly-supervised visual instrument-playing action detection in videos," *IEEE Transactions on Multimedia (TMM)*, vol. 21, no. 4, pp. 887-901, Apr. 2019.
- [16] J. Nam, K. Choi, J. Lee, S.-Y. Chou, and Y.-H. Yang, "Deep learning for audio-based music classification and tagging," *IEEE Signal Processing Magazine (SPM)*, vol. 36, no. 1, pp. 41-51, Jan. 2019.
- [17] J.-C. Lin, W.-L. Wei, T.-L. Liu, Y.-H. Yang, H.-M. Wang, H.-R. Tyan, and H.-Y. M. Liao, "Coherent deep-net fusion to classify shots in concert videos," *IEEE Transactions on Multimedia (TMM)*, vol. 20, no. 11, pp. 3123-3136, Nov. 2018.
- [18] Y.-H. Chin, J.-C. Wang, J.-C. Wang and Y.-H. Yang, "Predicting the probability density function of music emotion using emotion space mapping," *IEEE Transactions on Affective Computing (TAC)*, vol. 9, no. 4, pp. 541-549, Oct.-Dec. 2018.
- [19] Y.-S. Huang, S.-Y. Chou, and Y.-H. Yang, "Pop music highlighter: Marking the emotion keypoints," *Transactions of the International Society for Music Information Retrieval (TISMIR)*, vol. 1, no. 1, pp. 68-78, Sep. 2018.
- [20] Y.-P. Lin, P.-K. Jao, and Y.-H. Yang, "Improving cross-day EEG-based emotion classification using robust principal component analysis," *Frontiers in Computational Neuroscience*, Jul. 2017.
- [21] A. Aljanaki, Y.-H. Yang, and M. Soleymani, "Developing a benchmark for emotional analysis of music," *PLOS ONE*, vol. 12, no. 3, e0173392.doi:10.1371/journal.pone.0173392, Mar. 2017.
- [22] X. Hu and Y.-H. Yang, "The mood of Chinese pop music: Representation and recognition," *Journal of the Association for Information Science and Technology (JAIST)*, doi:10.1002/asi.23813, Jun. 2017.

- [23] Y.-A. Chen, J.-C. Wang, Y.-H. Yang, H. H. Chen, "Component tying for mixture model adaptation in personalization of music emotion recognition," *IEEE/ACM Transactions on Audio, Speech, and Language Processing* (TASLP), vol. 25, no. 7, pp. 1409-1420, Jul. 2017. [cover page of the issue]
- [24] X. Hu and Y.-H. Yang, "Cross-dataset and cross-cultural music mood prediction: A case on Western and Chinese pop songs," *IEEE Transactions on Affective Computing* (TAC), vol. 8, no. 2, pp. 228-240, Apr. 2017.
- [25] T.-S. Chan and Y.-H. Yang, "Informed group-sparse representation for singing voice separation," *IEEE Signal Processing Letters* (SPL), vol. 24, no. 2, pp. 156-160, Feb. 2017.
- [26] T.-S. Chan and Y.-H. Yang, "Polar n -complex and n -bicomplex singular value decomposition and principal component pursuit," *IEEE Transactions on Signal Processing* (TSP), vol. 64, no. 24, pp. 6533-6544, Dec. 2016.
- [27] M. Schedl, Y.-H. Yang, and P. Herrera, "Introduction to intelligent music systems and applications," *ACM Transactions on Intelligent Systems and Technology* (TIST), vol. 8, no. 2, article 17, Oct. 2016.
- [28] P.-K. Jao, L. Su, Y.-H. Yang and B. Wohlberg, "Monaural music source separation using convolutional sparse coding," *IEEE/ACM Transactions on Audio, Speech, and Language Processing* (TASLP), vol. 24, no. 11, pp. 2158-2170, Nov. 2016.
- [29] T.-S. Chan and Y.-H. Yang, "Complex and quaternionic principal component pursuit and its application to audio separation," *IEEE Signal Processing Letters* (SPL), vol. 23, no. 2, pp. 287-291, Feb. 2016.
- [30] C.-Y. Liang, L. Su and Y.-H. Yang, "Musical onset detection using constrained linear reconstruction," *IEEE Signal Processing Letters* (SPL), vol. 22, no. 11, pp. 2142-2146, Nov. 2015.
- [31] L. Su and Y.-H. Yang, "Combining spectral and temporal representations for multipitch estimation of polyphonic music," *IEEE/ACM Transactions on Audio, Speech, and Language Processing* (TASLP), vol. 23, no. 10, pp. 1600-1612, Oct. 2015.
- [32] P.-K. Jao and Y.-H. Yang, "Music annotation and retrieval using unlabeled exemplars: correlation and sparse codes," *IEEE Signal Processing Letters* (SPL), vol. 22, no. 10, pp. 1771-1775, Oct. 2015.
- [33] Y.-H. Yang and Y.-C. Teng, "Quantitative study of music listening behavior in a smartphone context," *ACM Transactions on Interactive Intelligent Systems* (TiIS), vol. 5, no. 3, article 14, Aug. 2015.
- [34] M. Soleymani, Y.-H. Yang, G. Irie, and A. Hanjalic, "Challenges and perspectives for affective analysis in multimedia," *IEEE Transactions on Affective Computing* (TAC), vol. 6, no. 3, pp. 206-208, 2015.
- [35] J.-C. Wang, Y.-H. Yang, H.-M. Wang, and S.-K. Jeng, "Modeling the affective content of music with a Gaussian mixture model," *IEEE Transactions on Affective Computing* (TAC), vol. 6, no. 1, pp. 56-68, Feb. 2015.
- [36] L. Su, H.-M. Lin, and Y.-H. Yang, "Sparse modeling of magnitude and phase-derived spectra for playing technique classification," *IEEE Transactions on Audio, Speech, and Language Processing* (TASLP), vol. 22, no. 12, pp. 2122-2132, Dec. 2014.
- [37] L. Su, C.-C. Yeh, J.-Y. Liu, J.-C. Wang, and Y.-H. Yang, "A systematic evaluation of the bag-of-frames representation for music information retrieval," *IEEE Transactions on Multimedia* (TMM), vol. 16, no. 5, pp. 1188-1200, Aug. 2014.
- [38] Y.-P. Lin, Y.-H. Yang, and T.-P. Jung, "Fusion of Electroencephalogram dynamics and musical contents for estimating emotional responses in music listening," *Frontiers in Neuroscience*, vol. 8, no. 94, pp. 1-14, May 2014.

- [39] Y.-H. Yang and J.-Y. Liu, "Quantitative study of music listening behavior in a social and affective context," *IEEE Transactions on Multimedia* (TMM), vol. 15, no. 6, pp. 1304-1315, Oct. 2013.
- [40] K.-S. Lin, A. Lee, Y.-H. Yang, C.-T. Lee, and H. H. Chen, "Automatic highlights extraction for drama video using music emotion and human face features," *Neurocomputing*, vol. 119, pp. 111-117, Nov. 2013.
- [41] C.-T. Lee, Y.-H. Yang and H. H. Chen, "Multipitch estimation of piano music by exemplar-based sparse representation," *IEEE Transactions on Multimedia* (TMM), vol. 14, no. 3, pp. 608-618, Jun. 2012.
- [42] Y.-H. Yang and H. H. Chen, "Machine recognition of music emotion: a review," *ACM Transactions on Intelligent Systems and Technology* (TIST), vol. 3, no. 3, article 40, May 2012.
- [43] Y.-C. Lin, Y.-H. Yang, and H. H. Chen, "Exploiting online tags for music emotion classification," *ACM Transactions on Multimedia Computing, Communications, and Applications* (TOMCCAP), vol. 7s, no. 1, article 26, Oct. 2011.
- [44] Y.-H. Yang and H. H. Chen, "Prediction of the distribution of perceived music emotions using discrete samples," *IEEE Transactions on Audio, Speech, and Language Processing* (TASLP), vol. 19, no. 7, pp. 2184 -2196, Sep. 2011.
- [45] Y.-H. Yang and H. H. Chen, "Ranking-based emotion recognition for music organization and retrieval," *IEEE Transactions on Audio, Speech, and Language Processing* (TASLP), vol. 19, no. 4, pp. 762-774, May 2011.
- [46] Y.-F. Su, Y.-H. Yang, M.-T. Lu, and H. H. Chen, "Smooth control of adaptive media playout for video streaming," *IEEE Transactions on Multimedia* (TMM), vol. 11, no. 7, pp. 1331-1339, Nov. 2009.
- [47] Y.-H. Yang, W.-H. Hsu, and H. H. Chen, "Online reranking via ordinal informative concepts for context fusion in concept detection and video search," *IEEE Transactions on Circuits and Systems for Video Technology* (TCSVT), vol. 19, no. 12, pp. 1880-1890, Dec. 2009.
- [48] Y.-H. Yang, Y.-C. Lin, Y.-F. Su, and H. H. Chen, "A regression approach to music emotion recognition," *IEEE Transactions on Audio, Speech, and Language Processing* (TASLP), vol. 16, no. 2, pp. 448-457, Feb. 2008.

• Conference Papers

- [49] Shih-Lun Wu and Yi-Hsuan Yang, "Compose & Embellish: Well-structured piano performance generation via a two-stage approach," in *Proc. IEEE Int. Conf. Acoustics, Speech and Signal Processing* (ICASSP), 2023.
- [50] Yen-Tung Yeh, Bo-Yu Chen, and Yi-Hsuan Yang, "Exploiting pre-trained feature networks for generative adversarial networks in audio-domain loop generation," in *Proc. Int. Society for Music Information Retrieval Conf.* (ISMIR), 2022.
- [51] Yueh-Kao Wu, Ching-Yu Chiu, and Yi-Hsuan Yang, "Conditional beat-aware drum accompaniment generation in the audio domain using Transformer VQ-VAE," in *Proc. Int. Society for Music Information Retrieval Conf.* (ISMIR), 2022.
- [52] Chih-Pin Tan, Wen-Yu Su, and Yi-Hsuan Yang, "Melody infilling with user-provided structural context," in *Proc. Int. Society for Music Information Retrieval Conf.* (ISMIR), 2022.
- [53] Da-Yi Wu, Wen-Yi Hsiao, Fu-Rong Yang, Oscar Friedman, Warren Jackson, Scott Bruzenak, Yi-Wen Liu, and Yi-Hsuan Yang, "SawSing: A DDSF-based singing vocoder via subtractive sawtooth waveform synthesis," in *Proc. Int. Society for Music Information Retrieval Conf.* (ISMIR), 2022.

- [54] Taejun Kim, Yi-Hsuan Yang, and Juhan Nam, "Joint estimation of fader and equalizer gains of DJ mixers using convex optimization," in *Proc. Int. Conf. Digital Audio Effects (DAFx)*, 2022.
- [55] Yu-Chih Tsai, Tse-Yu Pan, Ting-Yang Kao, Yi-Hsuan Yang, and Min-Chun Hu, "EMVGAN: Emotion-aware music-video common representation learning via generative adversarial networks," in *Proc. Int. Joint Workshop on Multimedia Artworks Analysis and Attractiveness Computing in Multimedia*, in conjunction with ACM ICMR, 2022.
- [56] Chien-Feng Liao, Jen-Yu Liu, and Yi-Hsuan Yang, "KaraSinger: Score-free singing voice synthesis with VQ-VAE using Mel-spectrograms," in *Proc. IEEE Int. Conf. Acoustics, Speech and Signal Processing (ICASSP)*, 2022.
- [57] Bo-Yu Chen, Wei-Han Hsu, Wei-Hsiang Liao, Marco A. Martínez Ramírez, Yuki Mitsufuji, and Yi-Hsuan Yang, "Automatic DJ transitions with differentiable audio effects and generative adversarial networks," in *Proc. IEEE Int. Conf. Acoustics, Speech and Signal Processing (ICASSP)*, 2022.
- [58] Yu-Hua Chen, Wen-Yi Hsiao, Tsu-Kuang Hsieh, Jyh-Shing Roger Jang, and Yi-Hsuan Yang, "Towards automatic transcription of polyphonic electric guitar music: A new dataset and a multi-loss transformer model," in *Proc. IEEE Int. Conf. Acoustics, Speech and Signal Processing (ICASSP)*, 2022.
- [59] Fu-Rong Yang, Yin-Ping Cho, Da-Yi Wu, Yi-Hsuan Yang, Shan-Hung Wu, and Yi-Wen Liu, "Mandarin singing voice synthesis with a phonology-based duration model," in *Proc. Asia Pacific Signal and Information Processing Association Annual Summit and Conf. (APSIPA ASC)*, 2021.
- [60] Chin-Jui Chang, Chun-Yi Lee, and Yi-Hsuan Yang, "Variable-length music score infilling via XLNet and musically specialized positional encoding," in *Proc. Int. Society for Music Information Retrieval Conf. (ISMIR)*, 2021.
- [61] Tun-Min Hung, Bo-Yu Chen, Yen-Tung Yeh, and Yi-Hsuan Yang, "A benchmarking initiative for audio-domain music generation using the FreeSound Loop Dataset," in *Proc. Int. Society for Music Information Retrieval Conf. (ISMIR)*, 2021.
- [62] Hsiao-Tzu Hung, Joann Ching, Seunghoon Doh, Nabin Kim, Juhan Nam and Yi-Hsuan Yang, "EMOPIA: A multi-modal pop piano dataset for emotion recognition and emotion-based music generation," in *Proc. Int. Society for Music Information Retrieval Conf. (ISMIR)*, 2021.
- [63] Juan Gómez-Cañón, Estefania Cano, Yi-Hsuan Yang, Perfecto Herrera, and Emilia Gomez, "Let's agree to disagree: Consensus entropy active learning for personalized music emotion recognition," in *Proc. Int. Society for Music Information Retrieval Conf. (ISMIR)*, 2021.
- [64] Pedro Sarmiento, Adarsh Kumar, C. J. Carr, Zack Zukowski, Mathieu Barthet, and Yi-Hsuan Yang, "DadaGP: A dataset of tokenized GuitarPro songs for sequence models," in *Proc. Int. Society for Music Information Retrieval Conf. (ISMIR)*, 2021.
- [65] Antoine Liutkus, Ondřej Cífka, Shih-Lun Wu, Umut Simsekli, Yi-Hsuan Yang, and Gael Richard, "Relative positional encoding for Transformers with linear complexity," in *Proc. International Conference on Machine Learning (ICML)*, 2021.
- [66] Ching-Yu Chiu, Joann Ching, Wen-Yi Hsiao, Yu-Hua Chen, Alvin Wen-Yu Su, Yi-Hsuan Yang, "Source separation-based data augmentation for improved joint beat and downbeat tracking," in *Proc. European Signal Processing Conference (EUSIPCO)*, 2021.
- [67] Taejun Kim, Yi-Hsuan Yang, and Juhan Nam, "Reverse-engineering the transition regions of real-world DJ mixes using sub-band analysis with convex optimization," in *Proc. International Conference on New Interface for Musical Expression (NIME)*, 2021.

- [68] Wen-Yi Hsiao, Jen-Yu Liu, Yin-Cheng Yeh, and Yi-Hsuan Yang, "Compound Word Transformer: Learning to compose full-song music over dynamic directed hypergraphs," in *Proc. AAAI Conf. Artificial Intelligence (AAAI)*, 2021 (acceptance rate 21%).
- [69] Joann Ching, Antonio Ramires, and Yi-Hsuan Yang, "Instrument role classification: Auto-tagging for loop based music," in *Proc. Joint Conference on AI Music Creativity*, 2020.
- [70] Yu-Hua Chen, Yu-Siang Huang, Wen-Yi Hsiao, and Yi-Hsuan Yang, "Automatic composition of guitar tabs by Transformers and groove modeling," in *Proc. Int. Society for Music Information Retrieval Conf. (ISMIR)*, 2020.
- [71] Shih-Lun Wu and Yi-Hsuan Yang, "The Jazz Transformer on the front line: Exploring the shortcomings of AI-composed music through quantitative measures," in *Proc. Int. Society for Music Information Retrieval Conf. (ISMIR)*, 2020.
- [72] Bo-Yu Chen, Jordan Smith, and Yi-Hsuan Yang, "Neural loop combiner: Neural network models for assessing the compatibility of loops," in *Proc. Int. Society for Music Information Retrieval Conf. (ISMIR)*, 2020.
- [73] Taejun Kim, Minsuk Choi, Evan Sacks, Yi-Hsuan Yang, and Juhan Nam, "A computational analysis of real-world DJ mixes using mix-to-track subsequence alignment," in *Proc. Int. Society for Music Information Retrieval Conf. (ISMIR)*, 2020.
- [74] Antonio Ramires, Frederic Font, Dmitry Bogdanov, Jordan Smith, Yi-Hsuan Yang, Joann Ching, Bo-Yu Chen, Yueh-Kao Wu, Hsu Wei-Han, and Xavier Serra, "The Freesound Loop Dataset and annotation tool," in *Proc. Int. Society for Music Information Retrieval Conf. (ISMIR)*, 2020.
- [75] Jen-Yu Liu, Yu-Hua Chen, Yin-Cheng Yeh and Yi-Hsuan Yang, "Unconditional audio generation with generative adversarial networks and cycle regularization," in *Proc. INTERSPEECH*, 2020.
- [76] Da-Yi Wu and Yi-Hsuan Yang, "Speech-to-singing conversion based on boundary equilibrium GAN," in *Proc. INTERSPEECH*, 2020.
- [77] Ching-Yu Chiu, Wen-Yi Hsiao, Yin-Cheng Yeh, Yi-Hsuan Yang, and Alvin W. Y. Su, "Mixing-specific data augmentation techniques for improved blind violin/piano source separation," in *Proc. IEEE Int. Workshop on Multimedia Signal Processing (MMSP)*, 2020.
- [78] Yu-Siang Huang and Yi-Hsuan Yang, "Pop Music Transformer: Beat-based modeling and generation of expressive Pop piano compositions," in *Proc. ACM Int. Conf. Multimedia (MM)*, 2020.
- [79] Jen-Yu Liu, Yu-Hua Chen, Yin-Cheng Yeh, and Yi-Hsuan Yang, "Score and lyrics-free singing voice generation," in *Proc. Int. Conf. Computational Creativity (ICCC)*, 2020.
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