Yi-Hsuan Yang (楊奕軒)[1,2,3]

1 Professor
Department of Electrical Engineering
National Taiwan University

2 Chief Music Scientist
Taiwan AI Labs

3 Joint-Appointed Research Fellow
Research Center for Information Technology Innovation (CITI),
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EE2-337, Department of Electrical Engineering, National Taiwan University, Taipei 106, Taiwan
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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 **since 2019/03**
- **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

- 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, 2ne 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, 2ne Prize, 美律電聲論文獎 2018

PUBLICATIONS

Total citations: **8051**; *citations of most-cited paper*: **562**; *h-index*: **44**; *i10-index*: **153**

- **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] 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), accepted for publication.

[5] 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), accepted for publication.

[6] Yi-Jen Shih, Shih-Lun Wu, Frank Zalkow, Meinard Müller, and Yi-Hsuan Yang, “Theme Transformer: Symbolic music generation with theme-conditioned Transformer,” *IEEE Transections on Multimedia* (TMM), accepted for publication.

[7] 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.

[8] 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.

[9] 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.

[10] 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.

[11] 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.

[12] 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.

[13] 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.

[14] 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.

[15] 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.

[16] 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.

[17] 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.

[18] 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.

[19] 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.

[20] 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.

[21] 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.

[22] 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), vo. 25, no. 7, pp. 1409-1420, Jul. 2017. [cover page of the issue]

[23] 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.

[24] 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.

[25] 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.

[26] 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.

[27] 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.

[28] 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.

[29] 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.

[30] 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.

[31] 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.

[32] 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.

[33] 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.

[34] 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.

[35] 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.

[36] 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.

[37] 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.

[38] 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.

[39] 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.

[40] 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.

[41] 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.

[42] 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.

[43] 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.

[44] 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.

[45] 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.

[46] 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.

[47] 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**

[48] 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.

[49] 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.

[50] Chih-Pin Tan, Wen-Yu Su, and Yi-Hsuan Yang, "Structure-aware music score infilling," in *Proc. Int. Society for Music Information Retrieval Conf.* (ISMIR), 2022.

[51] Da-Yi Wu, Wen-Yi Hsiao, Fu-Rong Yang, Oscar Friedman, Warren Jackson, Scott Bruzenak, Yi-Wen Liu, and Yi-Hsuan Yang, "SawSing: A DDSP-based singing vocoder via subtractive sawtooth waveform synthesis," in *Proc. Int. Society for Music Information Retrieval Conf.* (ISMIR), 2022.

[52] 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.

[53] 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.

[54] 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.

[55] 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.

[56] 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.

[57] 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.

[58] 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.

[59] 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.

[60] Hsiao-Tzu Hung, Joann Ching, Seungheon 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.

[61] 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.

[62] Pedro Sarmento, 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.

[63] 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.

[64] 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.

[65] Taejun Kim, Yi-Hsuan Yang, and Juhan Nam, “Reverse-engineering the transition regions of real-world DJ mixes usingsub-band analysis with convex optimization,” in *Proc. International Conference on New Interface for Musical Expression* (NIME), 2021.

[66] 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%).

[67] 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.

[68] 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.

[69] 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.

[70] 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.

[71] 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.

[72] 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.

[73] 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.

[74] Da-Yi Wu and Yi-Hsuan Yang, “Speech-to-singing conversion based on boundary equilibrium GAN,” in *Proc. INTERSPEECH*, 2020.

[75] 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.

[76] 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.

[77] 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.

[78] Tsung-Han Hsieh, Kai-Hsiang Cheng, Zhe-Cheng Fan, Yu-Ching Yang, Yi-Hsuan Yang, “Addressing the confounds of accompaniments in singer identification,” in *Proc. IEEE Int. Conf. Acoustics, Speech and Signal Processing* (ICASSP), 2020.

[79] Jayneel Parekh, Preeti Rao, Yi-Hsuan Yang, “Speech-to-singing conversion in an encoder-decoder framework,” in *Proc. IEEE Int. Conf. Acoustics, Speech and Signal Processing* (ICASSP), 2020.

[80] Jianyu Fan, Yi-Hsuan Yang, Kui Dong, Philippe Pasquier, “A comparative study of Western and Chinese classical music based on soundscape models,” in *Proc. IEEE Int. Conf. Acoustics, Speech and Signal Processing* (ICASSP), 2020.

[81] Hsiao-Tzu Hung, Chung-Yang Wang, Yi-Hsuan Yang, Hsin-Min Wang, “Improving automatic Jazz melody generation by transfer learning techniques,” in *Proc. Asia Pacific Signal and Information Processing Association Annual Summit and Conf.* (APSIPA ASC), 2019.

[82] Eva Zangerle, Michael Vötter, Ramona Huber and Yi-Hsuan Yang, “Hit song prediction: Leveraging low- and high-level audio features,” in *Proc. Int. Society for Music Information Retrieval Conf*. (ISMIR), 2019.

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