

List of Publications

Sebastian Ewert

Book Chapters

- [1] Sebastian Ewert and Meinard Müller. Score-informed source separation for music signals. In Meinard Müller, Masataka Goto, and Markus Schedl, editors, *Multimodal Music Processing*, volume 3 of *Dagstuhl Follow-Ups*, pages 73–94. Schloss Dagstuhl–Leibniz-Zentrum fuer Informatik, Dagstuhl, Germany, 2012.

Peer-Reviewed Journal Publications

- [2] Emmanouil Benetos, Simon Dixon, Zhiyao Duan, and Sebastian Ewert. Automatic music transcription: An overview. *IEEE Signal Processing Magazine*, 36(1):20–30, Jan 2019.
- [3] Siying Wang, Sebastian Ewert, and Simon Dixon. Identifying missing and extra notes in piano recordings using score-informed dictionary learning. *IEEE/ACM Transactions on Audio, Speech, and Language Processing*, 25(10):1877–1889, Oct 2017.
- [4] Sebastian Ewert and Mark B. Sandler. Piano transcription in the studio using an extensible alternating directions framework. *IEEE/ACM Transactions on Audio, Speech, and Language Processing*, 24(11):1983–1997, Nov 2016.
- [5] Siying Wang, Sebastian Ewert, and Simon Dixon. Robust and efficient joint alignment of multiple musical performances. *IEEE/ACM Transactions on Audio, Speech, and Language Processing*, 24(11):2132–2145, Nov 2016.
- [6] Sebastian Ewert, Bryan Pardo, Meinard Müller, and Mark D. Plumbley. Score-informed source separation for musical audio recordings: An overview. *IEEE Signal Processing Magazine*, 31(3):116–124, May 2014.
- [7] Jonathan Driedger, Meinard Müller, and Sebastian Ewert. Improving time-scale modification of music signals using harmonic-percussive separation. *IEEE Signal Processing Letters*, 21(1):105–109, Jan 2014.
- [8] Sebastian Ewert, Meinard Müller, Verena Konz, Daniel Müllensiefen, and Geraint Wiggins. Towards cross-version harmonic analysis of music. *IEEE Transactions on Multimedia*, 14(3):770–782, 2012.
- [9] Meinard Müller, Michael Clausen, Verena Konz, Sebastian Ewert, and Christian Fremerey. A multimodal way of experiencing and exploring music. *Interdisciplinary Science Reviews (ISR)*, 35(2):138–153, 2010.
- [10] Meinard Müller and Sebastian Ewert. Towards timbre-invariant audio features for harmony-based music. *IEEE Transactions on Audio, Speech, and Language Processing*, 18(3):649–662, 2010.

Peer-Reviewed Conference Publications

- [11] Daniel Stoller, Mi Tian, Sebastian Ewert, and Simon Dixon. Seq-U-Net: A one-dimensional causal U-Net for efficient sequence modelling. In *Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI)*, pages 2893–2900, Yokohama, Japan, 2020.
- [12] Ishwarya Ananthabhotla, Sebastian Ewert, and Joseph A. Paradiso. Using a neural network codec approximation loss to improve source separation performance in limited capacity networks. In *Proceedings of the IEEE World Congress on Computational Intelligence (WCCI) / International Joint Conference on Neural Networks (IJCNN)*, page 7, Glasgow, UK, 2020.
- [13] Daniel Stoller, Sebastian Ewert, and Simon Dixon. Training generative adversarial networks from incomplete observations using factorised discriminators. In *Proceedings of the International Conference on Learning Representations (ICLR)*, Addis Ababa, Ethiopia, 2020.
- [14] Ishwarya Ananthabhotla, Sebastian Ewert, and Joseph A. Paradiso. Towards a perceptual loss: Using a neural network codec approximation as a loss for generative audio models. In *Proceedings of the ACM International Conference on Multimedia (ACM MM)*, pages 1518–1525, Nice, France, 2019.
- [15] Andreas Jansson, Rachel M. Bittner, Sebastian Ewert, and Tillman Weyde. Joint singing voice separation and F0 estimation with deep U-net architectures. In *Proceedings of the European Signal Processing Conference (EUSIPCO)*, pages 1–5, Coruna, Spain, 2019.
- [16] Daniel Stoller, Simon Durand, and Sebastian Ewert. End-to-end lyrics alignment for polyphonic music using an audio-to-character recognition model. In *Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, pages 181–185, Brighton, UK, 2019.
- [17] Daniel Stoller, Sebastian Ewert, and Simon Dixon. Wave-U-Net: A multi-scale neural network for end-to-end audio source separation. In *Proceedings of the International Society for Music Information Retrieval Conference (ISMIR)*, pages 334–340, Paris, France, 2018.

- [18] Daniel Stoller, Sebastian Ewert, and Simon Dixon. Jointly detecting and separating singing voice: A multi-task approach. In *Proceedings of the International Conference on Latent Variable Analysis and Signal Separation (LVA/ICA)*, pages 329–339, Guildford, UK, 2018.
- [19] Daniel Stoller, Sebastian Ewert, and Simon Dixon. Adversarial semi-supervised audio source separation applied to singing voice extraction. In *Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, pages 2391–2395, Calgary, Canada, 2018.
- [20] Delia Fano Yela, Sebastian Ewert, Ken O’Hanlon, and Mark B. Sandler. Shift-invariant kernel additive modelling for audio source separation. In *Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, pages 616–620, Calgary, Canada, 2018.
- [21] Sebastian Ewert and Mark B. Sandler. An augmented Lagrangian method for piano transcription using equal loudness thresholding and LSTM-based decoding. In *Proceedings of the IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA)*, pages 146–150, New Paltz, NY, USA, 2017.
- [22] Florian Thalmann, Sebastian Ewert, Geraint Wiggins, and Mark B. Sandler. Exploring musical expression on the web: Deforming, exaggerating, and blending decomposed recordings. In *Proceedings of the Web Audio Conference (WAC)*, pages 1–6, London, UK, 2017.
- [23] Delia Fano Yela, Sebastian Ewert, Derry FitzGerald, and Mark B. Sandler. On the importance of temporal context in proximity kernels: A vocal separation case study. In *Proceedings of the AES International Conference on Semantic Audio*, pages 13–20, Erlangen, Germany, 2017.
- [24] Sebastian Ewert and Mark B. Sandler. Structured dropout for weak label and multi-instance learning and its application to score-informed source separation. In *Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, pages 2277–2281, New Orleans, USA, 2017.
- [25] Delia Fano Yela, Sebastian Ewert, Derry FitzGerald, and Mark B. Sandler. Interference reduction in music recordings combining kernel additive modelling and non-negative matrix factorization. In *Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, pages 51–55, New Orleans, USA, 2017.
- [26] Ken O’Hanlon, Sebastian Ewert, Johan Pauwels, and Mark B. Sandler. Improved template based chord recognition using the CRP feature. In *Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, pages 306–310, New Orleans, USA, 2017.
- [27] Sebastian Ewert, Siying Wang, Meinard Müller, and Mark B. Sandler. Score-informed identification of missing and extra notes in piano recordings. In *Proceedings of the International Society for Music Information Retrieval Conference (ISMIR)*, pages 30–36, New York, USA, 2016.
- [28] Jonathan Driedger, Stefan Balke, Sebastian Ewert, and Meinard Müller. Template-based vibrato analysis in music signals. In *Proceedings of the International Society for Music Information Retrieval Conference (ISMIR)*, pages 239–245, New York, USA, 2016.
- [29] Francisco J. Rodriguez-Serrano, Sebastian Ewert, Pedro Vera-Candeas, and Mark B. Sandler. A score-informed shift-invariant extension of complex matrix factorization for improving the separation of overlapped partials in music recordings. In *Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, pages 61–65, Shanghai, China, 2016.
- [30] Siying Wang, Sebastian Ewert, and Simon Dixon. Compensating for asynchronies between musical voices in score-performance alignment. In *Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, pages 589–593, Brisbane, Australia, 2015.
- [31] Sebastian Ewert, Mark D. Plumbley, and Mark B. Sandler. A dynamic programming variant of non-negative matrix deconvolution for the transcription of struck string instruments. In *Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, pages 569–573, Brisbane, Australia, 2015.
- [32] Siying Wang, Sebastian Ewert, and Simon Dixon. Robust joint alignment of multiple versions of a piece of music. In *Proceedings of the International Society for Music Information Retrieval Conference (ISMIR)*, pages 83–88, Taipei, Taiwan, 2014.
- [33] Sebastian Ewert, Mark D. Plumbley, and Mark B. Sandler. Accounting for phase cancellations in non-negative matrix factorization using weighted distances. In *Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, pages 649–653, Florence, Italy, 2014.
- [34] Emmanouil Benetos, Sebastian Ewert, and Tillman Weyde. Automatic transcription of pitched and unpitched sounds from polyphonic music. In *Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, pages 3131–3135, Florence, Italy, 2014.
- [35] Matthias Mauch and Sebastian Ewert. The audio degradation toolbox and its application to robustness evaluation. In *Proceedings of the International Society for Music Information Retrieval Conference (ISMIR)*, pages 83–88, Curitiba, Brazil, 2013.

- [36] Sebastian Ewert, Meinard Müller, and Mark B. Sandler. Efficient data adaption for musical source separation methods based on parametric models. In *Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, pages 46–50, Vancouver, Canada, 2013.
- [37] Jonathan Driedger, Harald Grohgan, Thomas Prätzlich, Sebastian Ewert, and Meinard Müller. Score-informed audio decomposition and applications. In *Proceedings of the ACM International Conference on Multimedia (ACM-MM)*, pages 541–544, Barcelona, Spain, 2013.
- [38] Meinard Müller, Jonathan Driedger, and Sebastian Ewert. Notentext-informierte Quellentrennung für Musiksignale. In *Proceedings of the Workshop Audiosignal- und Sprachverarbeitung (WASP) / GI-Jahrestagung*, pages 2928–2942, Koblenz, Germany, 2013.
- [39] Sebastian Ewert and Meinard Müller. Using score-informed constraints for NMF-based source separation. In *Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, pages 129–132, Kyoto, Japan, 2012.
- [40] Verena Thomas, Sebastian Ewert, and Michael Clausen. Fast intra-collection audio matching. In *Proceedings of the International ACM Workshop on Music Information Retrieval with User-Centered and Multimodal Strategies (MIRUM)*, pages 1–6, Nara, Japan, 2012.
- [41] Sebastian Ewert and Meinard Müller. Estimating note intensities in music recordings. In *Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, pages 385–388, Prague, Czech Republic, 2011.
- [42] Sebastian Ewert and Meinard Müller. Score-informed voice separation for piano recordings. In *Proceedings of the International Society for Music Information Retrieval Conference (ISMIR)*, pages 245–250, Miami, USA, 2011.
- [43] Meinard Müller and Sebastian Ewert. Chroma Toolbox: MATLAB implementations for extracting variants of chroma-based audio features. In *Proceedings of the International Society for Music Information Retrieval Conference (ISMIR)*, pages 215–220, Miami, USA, 2011.
- [44] David Damm, Harald Grohgan, Frank Kurth, Sebastian Ewert, and Michael Clausen. SyncTS: Automatic synchronization of speech and text documents. In *Proceedings of the AES International Conference Semantic Audio*, pages 98–107, Ilmenau, Germany, 2011.
- [45] Verena Konz, Meinard Müller, and Sebastian Ewert. A multi-perspective evaluation framework for chord recognition. In *Proceedings of the International Society for Music Information Retrieval Conference (ISMIR)*, pages 9–14, Utrecht, Netherlands, 2010.
- [46] Sebastian Ewert, Meinard Müller, and Peter Grosche. High resolution audio synchronization using chroma onset features. In *Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, pages 1869–1872, Taipei, Taiwan, 2009.
- [47] Meinard Müller, Sebastian Ewert, and Sebastian Kreuzer. Making chroma features more robust to timbre changes. In *Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, pages 1877–1880, Taipei, Taiwan, 2009.
- [48] Meinard Müller, Verena Konz, Andi Scharfstein, Sebastian Ewert, and Michael Clausen. Towards automated extraction of tempo parameters from expressive music recordings. In *Proceedings of the International Society for Music Information Retrieval Conference (ISMIR)*, pages 69–74, Kobe, Japan, 2009.
- [49] Christian Fremerey, Michael Clausen, Sebastian Ewert, and Meinard Müller. Sheet music-audio identification. In *Proceedings of the International Society for Music Information Retrieval Conference (ISMIR)*, pages 645–650, Kobe, Japan, 2009.
- [50] Sebastian Ewert, Meinard Müller, and Roger B. Dannenberg. Towards reliable partial music alignments using multiple synchronization strategies. In *Proceedings of the International Workshop on Adaptive Multimedia Retrieval (AMR), Lecture Notes in Computer Science (LNCS) vol. 6535*, pages 35–48, Madrid, Spain, 2009.
- [51] Sebastian Ewert and Meinard Müller. Refinement strategies for music synchronization. In *Proceedings of the International Symposium on Computer Music Modeling and Retrieval (CMMR), Lecture Notes in Computer Science (LNCS)*, volume 5493, pages 147–165, Copenhagen, Denmark, 2008.
- [52] Meinard Müller and Sebastian Ewert. Joint structure analysis with applications to music annotation and synchronization. In *Proceedings of the International Society for Music Information Retrieval Conference (ISMIR)*, pages 389–394, Philadelphia, USA, 2008.

Theses

- [53] Sebastian Ewert. *Signal Processing Methods for Music Synchronization, Audio Matching, and Source Separation*. PhD thesis, University of Bonn, Germany, 2012.
- [54] Sebastian Ewert. Effiziente Methoden zur hochauflösenden Musiksynchronisation. Master’s thesis, University of Bonn, Germany, 2007.

Further Publications

- [55] Qingyang Xi, Rachel M Bittner, Johan Pauwels, Sebastian Ewert, and Juan P. Bello. Guitar-set preview: A dataset for guitar transcription and more. In *International Society for Music Information Retrieval Conference (ISMIR) - Latebreaking*, pages 1–2, Suzhou, China, 2017.
- [56] Florian Thalmann, Sebastian Ewert, Mark B. Sandler, and Geraint A. Wiggins. Spatially rendering decomposed recordings - integrating score-informed source separation and semantic playback technologies. In *International Society for Music Information Retrieval Conference (ISMIR) - Late-Breaking Session*, page 2, Málaga, Spain, 2015.
- [57] György Fazekas, Sebastian Ewert, Alo Allik, Simon Dixon, and Mark B. Sandler. Shared open vocabularies and semantic media. In *International Society for Music Information Retrieval Conference (ISMIR) - Late-Breaking Session*, page 2, Porto, Portugal, 2012.
- [58] Sebastian Ewert, Meinard Müller, and Michael Clausen. Score-informed audio parametrization. International Society for Music Information Retrieval Conference (ISMIR) - Late-Breaking Session, 2010.
- [59] Verena Konz, Meinard Müller, and Sebastian Ewert. Ein Baseline-Experiment zur Klassifizierung von Problemen bei der Akkorderkennung. In *Proceedings of the Deutsche Jahrestagung für Akustik (DAGA)*, pages 201–202, Berlin, Germany, 2010.
- [60] Sebastian Ewert, Meinard Müller, and Michael Clausen. Musicmatching bei Variabilitäten in der Harmonik und Polyphonie. In *Proceedings of the Deutsche Jahrestagung für Akustik (DAGA)*, pages 187–188, Berlin, Germany, 2010.
- [61] Verena Thomas, Christian Fremerey, Sebastian Ewert, and Michael Clausen. Notenschrift-Audio Synchronisation komplexer Orchesterwerke mittels Klavierauszug. In *Proceedings of the Deutsche Jahrestagung für Akustik (DAGA)*, pages 191–192, Berlin, Germany, 2010.
- [62] Sebastian Ewert, Meinard Müller, and Michael Clausen. Towards timbre-invariant audio features for harmony-based music. In *Proceedings of the International Conference on Acoustics (NAG/DAGA)*, pages 352–353, Rotterdam, Netherlands, 2009.
- [63] Peter Grosche, Meinard Müller, and Sebastian Ewert. Combination of onset-features with applications to high-resolution music synchronization. In *Proceedings of the International Conference on Acoustics (NAG/DAGA)*, pages 357–360, Rotterdam, Netherlands, 2009.
- [64] Sebastian Ewert, Meinard Müller, Daniel Müllensiefen, Michael Clausen, and Geraint A. Wiggins. Case study “Beatles Songs” – What can be learned from unreliable music alignments? In Eleanor Selfridge-Field, Frans Wiering, and Geraint A. Wiggins, editors, *Knowledge Representation for Intelligent Music Processing*, number 09051 in Dagstuhl Seminar Proceedings. Schloss Dagstuhl - Leibniz Center for Informatics, Germany, Jan 2009.
- [65] Frank Kurth, Meinard Müller, Sebastian Ewert, and Michael Clausen. Vektorquantisierung chromabasierter Audiomerkmale. In *Proceedings of the Deutsche Jahrestagung für Akustik (DAGA)*, pages 557–558, Dresden, Germany, 2008.

Last Update: 2020-07-15