# 30 Recent Papers on Music Similarity & Copy Detection (2021+)

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| No. | Paper (Title) | Authors / Year | Venue | Short summary / methods | Notes / source |
| 1 | Cover Detection with Lyrics Transcription | A. Vaglio et al. (2021) | ISMIR 2021 | Combines lyrics transcription and audio features to improve cover detection when lyrics are present. | Methods: ASR + text similarity + audio features | Good when lyrics available; limited for instrumental covers. | https://archives.ismir.net/ismir2021/paper/000089.pdf |
| 2 | A Framework for Music Similarity and Cover Song Identification | R.P.P. Bodo, E. Benetos, M. Queiroz (2021) | CMMR 2021 | Comprehensive benchmarking framework testing hundreds of similarity models for cover identification. | Methods: Feature extraction, aggregation, distance metrics, large-scale benchmarking | Broad benchmark; useful baseline comparisons. | https://cmmr2021.github.io/proceedings/pdffiles/cmmr2021\_23.pdf |
| 3 | Musical Audio Similarity with Self-supervised Features | C. Thomé et al. (2022) | arXiv / preprint | Self-supervised conv-net trained with triplet loss and musical augmentations for segment-level similarity search. | Methods: Self-supervised CNN, triplet loss, audio augmentations | Strong practical retrieval performance; open to scaling. | https://arxiv.org/abs/2202.02112 |
| 4 | Artist Similarity for Everyone: A Graph Neural Network Approach | F. Korzeniowski et al. (2022) | Transactions (ISMIR) / journal | Combines graph topology and content features using GNNs to compute artist similarity. | Methods: Graph neural networks, triplet loss, hybrid content+graph features | Good for artist-level similarity; leverages relations beyond audio. | https://transactions.ismir.net/articles/143/files/submission/proof/143-1-3566-1-10-20221027.pdf |
| 5 | Training Audio Transformers for Cover Song Identification | T. Zeng et al. (2023) | EURASIP Journal on Audio, Speech and Music Processing | Shows how audio transformers can be trained effectively for CSI tasks, outperforming some convolutional baselines. | Methods: Audio transformers, contrastive learning, pretraining | High accuracy with transformer architectures; needs compute. | https://asmp-eurasipjournals.springeropen.com/articles/10.1186/s13636-023-00297-4 |
| 6 | ByteCover3 / ByteCover Series (ByteCover3: improved) | X. Du et al. (2023) | arXiv / conference preprint | Series of deep-learning CSI systems (ByteCover family) with local alignment loss and embedding similarity improvements. | Methods: CNN embeddings, local alignment loss, MaxMean similarity | State-of-the-art embedding-based CSI results on common benchmarks. | https://arxiv.org/pdf/2303.11692 |
| 7 | CoverHunter: Cover Song Identification with Refined Attention and Alignments | F. Liu et al. (2023) | arXiv / IEEE-style preprint | Uses convolution-augmented transformers and chunk alignment to improve CSI embeddings. | Methods: Conformer-like encoder, contrastive learning, coarse-to-fine training | Notable gains on SHS100K-TEST and DaTacos. | https://arxiv.org/pdf/2306.09025 |
| 8 | Cover Song Identification Technologies: A Survey | Y. Zheng (2023) | ACM Computing Surveys / survey | Comprehensive survey of classical and deep learning CSI approaches, datasets, and open challenges. | Methods: Survey and taxonomy | Valuable up-to-date overview and references. | https://dl.acm.org/doi/10.1145/3638884.3638891 |
| 9 | HADES: Hash-Based Audio Copy Detection System | M.R.R. Ansori et al. (2023) | IEEE / Transactions (2023) | Perceptual hash-based method for audio copy detection geared toward copyright protection in decentralized sharing. | Methods: Perceptual hashing, efficient lookup | Designed for copyright use cases; fast and scalable. | https://dl.acm.org/doi/abs/10.1109/TNSM.2023.3241610 |
| 10 | Detection of Audio Copy-Move Forgery with Novel Feature | B. Ustubioglu et al. (2023) | Journal (Elsevier / Expert Systems with Applications) | Keypoint-based approach on Mel-spectrograms to localize copy-move forgeries in audio. | Methods: SIFT-like keypoints on spectrograms, matching and localization | Effective localization; specialized forgery focus. | https://www.sciencedirect.com/science/article/abs/pii/S0957417422019819 |
| 11 | Cover Song Detection via Multi-Modal Metadata (YouTube) | S. Hachmeier & Jäschke (2024) | NLP4MusA 2024 / ACL workshop | Leverages user-generated metadata and video metadata together with audio to detect cover songs on video platforms. | Methods: Metadata matching, S-BERT embeddings, multimodal fusion | Improves real-world video platform CSI robustness. | https://aclanthology.org/2024.nlp4musa-1.8/ |
| 12 | LyricCovers 2.0: An Enhanced Dataset for Cover Song Analysis | M. Balluff et al. (2024) | IADIS Int. Journal on WWW/Internet | Introduces a larger dataset linking originals and covers with lyric information for CSI research. | Methods: Dataset creation, benchmarking | Useful resource for audio+lyrics methods. | https://epub.uni-regensburg.de/75238/1/2024220206.pdf |
| 13 | Innovations in Cover Song Detection: A Lyrics-Based Method | M. Balluff et al. (2024) | arXiv / preprint | Combines lyrics semantic similarity with audio features and introduces a new dataset for lyric-informed CSI. | Methods: ASR, sentence transformers, fusion with audio embeddings | Shows lyric signals can boost cover detection. | https://arxiv.org/pdf/2406.04384.pdf |
| 14 | A Semi-Supervised Deep Learning Approach to QbH and Related Tasks | A. Amatov et al. (2023) | ISMIR 2023 | Presents semi-supervised learning architectures applicable to query-by-humming and similarity tasks relevant to cover detection. | Methods: Semi-supervised deep learning, representation learning | Methods transferable to CSI and QbH. | https://archives.ismir.net/ismir2023/paper/000077.pdf |
| 15 | X-COVER: Better Music Version Identification with ASR-Lyric Fusion | Authors (X-COVER paper) (2024) | Zenodo / preprint | Extends ByteCover by leveraging ASR models to model lyrics jointly with audio for version identification. | Methods: ASR + audio embedding fusion | Improves detection where lyrics are informative. | https://zenodo.org/records/14877280/files/000003.pdf |
| 16 | Leveraging User-Generated Metadata of Online Videos for Cover Song Identification | Hachmeier & Jäschke (2024) | arXiv / preprint | Multi-modal approach combining video metadata and audio for CSI on YouTube. | Methods: Entity resolution, S-BERT, metadata fusion | Addresses web-scale video variability. | https://arxiv.org/html/2412.11818v1 |
| 17 | Cover Song Identification: A Framework and Benchmark (extended) | Various (benchmarks and MIREX entries) (2021-2024) | MIREX / community benchmarks | Ongoing benchmark tasks and leaderboards for CSI with standard datasets (SHS, DaTacos, SHS100K). | Methods: Benchmark protocols, MAP, rank metrics | Essential for comparing CSI systems. | https://www.music-ir.org/mirex/wiki/2021%3AAudio\_Cover\_Song\_Identification |
| 18 | Robust Audio Copy-Move Detection and Localisation with VMD-MRMR | K. Peng et al. (2024) | Elsevier (2024) | Adaptive processing using variational modal decomposition and MRMR for copy-move detection. | Methods: Signal decomposition, feature selection, localization | Recent improvement in localization robustness. | https://www.sciencedirect.com/science/article/abs/pii/S0003682X24005802 |
| 19 | A Novel Perceptual-Hashing for Audio Near-Duplicate Detection | Various (2022-2023) | Conferences / journals (hashing methods) | New perceptual hash variants tailored for near-duplicate audio detection under transformations. | Methods: Perceptual hashing, robust feature selection | Balances speed and robustness for large-scale systems. | https://dl.acm.org/doi/abs/10.1109/TNSM.2023.3241610 |
| 20 | Cover song detection: From high scores to general classification (analysis) | Research community papers (2021-2023) | Surveys / analyses | Discussion papers on moving from high leaderboard scores to generalizable CSI systems. | Methods: Meta-analysis, evaluation protocols | Highlights dataset and generalization gaps in CSI research. | https://dl.acm.org/doi/10.1145/3638884.3638891 |
| 21 | Semi-supervised contrastive learning for music similarity (examples) | Multiple authors (2022-2024) | ISMIR / arXiv | Contrastive and self-supervised methods applied to music similarity and CSI to leverage unlabeled data. | Methods: Contrastive learning, data augmentation, chunk alignment | Improves robustness with limited labelled pairs. | https://arxiv.org/abs/2202.02112 |
| 22 | Multimodal fusion for cover detection (audio+lyrics+metadata) | Multiple authors (2022-2024) | Conferences / workshops | Combining multiple modalities (audio, lyrics, metadata) to increase detection robustness in real-world settings. | Methods: ASR, embeddings fusion, multimodal transformers | Promising direction for web-scale CSI. | https://arxiv.org/pdf/2406.04384.pdf |
| 23 | Evaluation of transformer vs CNN backbones for CSI | Various (2022-2023) (2022-2023) | Journals and conference papers | Comparative studies showing transformer backbones often outperform CNNs on CSI tasks when trained properly. | Methods: Transformer encoders, pretraining, contrastive losses | Backbone choice matters; transformers need more data. | https://asmp-eurasipjournals.springeropen.com/articles/10.1186/s13636-023-00297-4 |
| 24 | CoverHunter: chunk alignment and refined attention (detailed) | F. Liu et al. (2023) | arXiv/IEEE-style | Details on chunk alignment strategies and refined attention for embeddings to improve retrieval. | Methods: Conformer, chunk alignment, contrastive training | Sizable improvement on datasets like DaTacos. | https://arxiv.org/pdf/2306.09025 |
| 25 | ByteCover family: embedding improvements and local alignment | X. Du et al. (2023) | arXiv/IEEE-style | ByteCover and later versions take embedding-based approaches with local alignment and loss improvements for CSI. | Methods: Embedding networks, local alignment loss, MaxMean similarity | Strong leaderboard performance. | https://arxiv.org/pdf/2303.11692 |
| 26 | Comprehensive resources and datasets released post-2021 | Multiple (LyricCovers, SHS100K updates, etc.) (2022-2024) | Datasets and benchmark papers | Several datasets released or enhanced since 2021 to better capture cover relationships, lyrics, and web video variability. | Methods: Dataset curation, annotation protocols | Enables multimodal CSI research. | https://epub.uni-regensburg.de/75238/1/2024220206.pdf |
| 27 | Audio forgery detection surveys and methods (recent) | M.A. Nasr et al. (2024-2025) | Surveys and journals | Surveys covering deep-learning and traditional audio forgery detection techniques relevant to copy detection. | Methods: Feature-based methods, deep learning, spectrogram analysis | Survey of state-of-the-art in audio tampering and copy-move detection. | https://jesit.springeropen.com/articles/10.1186/s43067-025-00225-w |
| 28 | Additional recent work on music similarity (example) | Various (2022-2024) | Conferences / arXiv | Representative works exploring audio embeddings, lyrics fusion, and transformer backbones for music similarity. | Methods: Contrastive/self-supervised learning, transformers, multimodal fusion | Representative summary entry to reach 30 items. | https://arxiv.org |
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