

TROMPA

TROMPA: Towards Richer Online Music Public-domain Archives

Deliverable 7.2 Annual Dissemination Report v3

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Executive Summary

This document summarises the final TROMPA dissemination output for year three of the project. Here we list talks, publications, workshops, software, blog and other public facing engagements produced in the past year. We provide a detailed summary of all tangible deliverables and relate them to our initial proposed plan. Where we did not meet our listed goals, we explain why this was the case. Most failures to produce were related to the COVID-19 global pandemic.

Despite these challenges, we have been able to disseminate our work across a wide body of mediums across all of our work packages. We further list projects related to and enabled by TROMPA that have promising future development as well as projects that have been submitted for academic dissemination. Final counts for Year 3's academic project output include 18 academic publications including peer reviewed journal articles and conference proceedings, 25 MEI score encodings, 28 software repositories or codebases, and 14 professional outreach events. For a detailed description of journal articles, see Appendix A.1. For a detailed description of peer reviewed conferences and workshops see Appendix A.2. For a detailed description of encodings, see Appendix B. For a detailed list of software, see Appendix C.

Version Log

#	Date	Description
v0.1	10 April 2021	Initial version submitted for internal review
v0.2	24 April 2021	Revised version after internal review
v0.3	28 April 2021	Minor changes
v0.4	9 May 2021	Added some missing minor contributions
v1.0	10 May2021	Final version submitted to EU

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1. Introduction

As noted in our previous dissemination report, TROMPA encompasses an array of projects, each seeking to reach end users with qualitatively different needs. These end users range from music scholars, to music performers, to music enthusiasts. As noted in our first Annual Dissemination Report, these three groups form the basis of the groups targeted by TROMPA's dissemination efforts. In addition to the varying technical demands of each group, TROMPA has attempted to disseminate output relevant to each group using mediums that meet users where they are.

Complementing more traditional venues such as peer-reviewed journal articles and academic conferences, TROMPA has also documented our output with the help of national and local broadcasts, online forums, social media, and the project website. We have found these latter forms of communication particularly valuable in sharing our work given the COVID-19 global pandemic that has upended many of the regular avenues for sharing anticipated in our first dissemination report.

Our project website¹, set up in month 3 of TROMPA (deliverable D7.1) has been particularly helpful in featuring our work for sharing output immediately. A listing of these posts appears in section four. In our Exploitation Plan (deliverable D7.3) we summarise the results of the commercial exploitation created by TROMPA.

¹ <http://trompamusic.eu>

2. Academic Dissemination

The output in this section details the technical output of the project. This comprises academic publications, infrastructure for hosting software, data and software developed during the project, professional talks, and academic service. The majority of content in this section is directed for academics in the field of music information retrieval (MIR).

2.1 Academic publications

A full list of publications published or accepted in the third year of TROMPA is given in Appendix A.

2.2 Open science: datasets and code

All publicly facing software developed as part of the TROMPA project can be found as a part of the TROMPA Github organisation². This organization currently acts as an umbrella for a number of repositories related to the Contributor Environment (CE). The Contributor Environment acts as the main hub for which all user and musical data is able to interact with one another. A list of all open source software developed during TROMPA is available in Appendix C.

As noted in our previous dissemination report, TROMPA is committed to reproducible and open science in addition to generating public-domain music archives. By abiding to open science practices, we ensure a certain degree of sustainability for the materials created during TROMPA so that future researchers are able to use what has been created here in their own work. In order to catalog both our datasets and results from our research, we created a Zenodo community.³ This repository was updated regularly as new data became available.

At the end of the project, we can report the following datasets now available for access with the brief description from the documentation.

- ❖ Dagstuhl ChoirSet
 - Rosenzweig, S., Cuesta, H., Weiß, C., Scherbaum, F., Gómez, E., & Müller, M. (2021)
 - A multitrack dataset of choral music to aid in research in MIR on choral singing. Dataset includes audio recordings of two amateur vocal ensembles playing two pieces of music. Audio uses close-up microphones to capture voices.
 - Online on Zenodo⁴
- ❖ Composer name cross-links across resources: Delpher, CDR/Muziekweb, Wikidata, and the IMSLP
 - Liem, C.C.S. (2020)
 - Database of searches across Dutch newspaper querying all occurrences of names of composers that are known and listed in Muziekweb, Wikidata, IMSLP
 - Online on Zenodo⁵

² <https://github.com/trompamusic>

³ <https://zenodo.org/communities/trompa/>

⁴ <https://zenodo.org/record/3897182#.YlqEtl4zYuU>

⁵ <https://zenodo.org/record/4726637#.YlqFFo4zYuU>

- ❖ Da-TACOS: A Dataset for Cover Song Identification and Understanding
 - Yesiler, F., Tralie, C., Correya, A, Silva, D., Tovstogan, P., Gómez, E., & Serra, X. (2019)
 - Dataset of song covers used for cover identification and understanding.
 - Online on Zenodo⁶
- ❖ Choral Singing Dataset
 - Cuesta, H., Gómez, E., Martorell, A., & Loáiciga, F. (2018)
 - Dataset of audio recordings from groups of singers with individual close microphones. Audio contains data from sixteen singers from Anton Bruckner Choir from Barcelona performing three pieces. Dataset also includes associated MIDI files.
 - Online on Zenodo⁷
- ❖ MediaEval AcousticBrainz Genre AllMusic
 - Bogdanov, D., Porter, A., Urbano, J., & Schreiber, H. (2018)
 - Dataset of genre annotations and musical features taken from audio used in genre hierarchical multi-label genre classification systems. Four datasets included genre and subgenre annotations from AllMusic, Dicogs, Lastfm, and Tagtraum.
 - Online on Zenodo⁸
- ❖ MediaEval AcousticBrainz Genre
 - Bogdanov, D., Porter, A., Urbano, J., & Schreiber, H. (2018)
 - Subset of restricted dataset above
 - Online on Zenodo⁹
- ❖ TROMPA Music Enthusiasts Emotion Dataset
 - Dataset of emotion annotations collected using citizen science (*in preparation*)

MEI dataset

As part of activities relating to the scholars (D6.3) and instrumental performers (D6.5) use-cases, we undertook significant music encoding activities which resulted in a substantial corpus of MEI encodings of a total of 305 printed score pages or 9491 musical measures or 132.103 notes: a comprehensive collection of Beethoven's entire non-Sonata pieces for solo piano, two complete piano sonatas and two individual sonata movements, plus an encoding of a piece by Clara Schumann (in honour of whom the instrumental performer prototype is named), and a 4-hand piano-reduction of the beginning of Mahler's 4th Symphony. These encodings are stored in a dedicated GitHub organisation,¹⁰ are each licensed under a Creative Commons Attribution (CC-BY-4.0) license, and are listed in the TROMPA community in Zenodo. The encodings are listed in Appendix B.

Tutorials

In addition to the above datasets, we also developed tutorial material to help others learn about the project and its output, and address some topics of interest for us.

- ❖ Fairness, Accountability and Transparency in Music Information Research (FAT-MIR)

⁶ <https://zenodo.org/record/4717628#.YlqFHI4zYuU>

⁷ <https://zenodo.org/record/2649950#.Ylq6tUNKiUk>

⁸ <https://zenodo.org/record/2553414#.Ylq6zkNKiUk>

⁹ <https://zenodo.org/record/2554044#.Ylq6-UNKiUk>

¹⁰ <https://github.com/trompamusic-encodings>

- Gómez, E., Holzapfel, A., Miron, M., & Sturm, B. (2019)
- Tutorial on topics of ethics, fairness, accountability and transparency for research in music information retrieval. Tutorial inspired by similar discussions made at FAT-Machine Learning conferences and explainable AI. Workshop developed for both students and researchers working in MIR.
- Lesson

Software

Lastly, several members of the TROMPA team were affiliated with the release of new software frameworks that support music encoding. Details of this software release are described in a blog post listed in Section 4.

- ❖ Music Encoding and Linked Data framework (MELD)
 - Weigl, D., Lewis, D., Klyne, G., Page, K. (2021)
 - 2.0 release of the Music Encoding and Linked Data framework (MELD). This software forms the foundation of several of the TROMPA use cases, serving to support the integration of audio and symbolic music notation on the web.
 - Detailed in TROMPA Blog¹¹
 - Software Framework
- ❖ mei-friend
 - Goebel, W., & Weigl, D. (2021)
 - Designed to alleviate the validation and fixing of MEI encodings in the final stages of conversion or OMR processes
 - Package for the Atom text editor, distributed and maintained through the Atom package manager
 - Downloaded 205 times as of 30 April 2021¹²

2.3 Invited academic talks

In the final year of the project, invited academic talks were severely limited. This is large in part due to the COVID-19 pandemic that led to several events being postponed or cancelled.

- ❖ Weigl, D. M. (February, 2020). Using graph technologies to interconnect and enrich public-domain music resources. Graph Technologies in the Humanities Conference 2020, University of Vienna.
- ❖ Gómez, E. (September 2020). Human and Machine Intelligence: a Music Information Retrieval perspective, Keynote speech, International Conference on Computational Creativity 2020.
- ❖ Gómez, E. (to come in July 2021). Invited Keynote Speech at the Sound and Music Computing Conference, virtual format.

¹¹ <https://trompamusic.eu/node/144>

¹² <https://atom.io/packages/mei-friend>

2.4 Academic service

In the final year of the project, invited academic talks were severely limited. This is large in part due to the COVID-19 pandemic that led to several events being postponed or cancelled.

- ❖ Emilia Gómez serves as co-editor in chief of the *Transactions of the International Society for Music Information Retrieval*, 2020-2021.
- ❖ David Weigl and Werner Goebel co-coordinated a workshop/tutorial on Developing Verovio at the *Music Encoding Conference*, 26 May 2020
- ❖ Julián Urbano guest-edited the special issue on the 20th Anniversary of ISMIR at the *Transactions of the International Society for Music Information Retrieval*, 2020.¹³
- ❖ Many members of the TROMPA project take part as reviewer or program chairs at the International Society for Music Information Retrieval conference.
- ❖ Emilia Gómez was invited as “Notable Women in MIR” series of talks at ISMIR 2020 conference (virtual format).

3. Professional Outreach

The output in this section details activities targeted at dissemination TROMPA’s professional and non-academic end users. These include individuals such as music librarians, software, developers, and choral singers. This section details various project presentations and events held surrounding infrastructure integral to TROMPA’s research goals. All events below were organised, funded, and thus enabled by TROMPA.

Like other sections, project based events were severely reduced in the final year of the project due to the COVID-19 Global pandemic.

3.1 Participation to and demonstrations at professional events

- ❖ Gómez-Cañón, J.S., Cano, E., Herrera, P., & Gómez, E. (2020). Transfer learning from speech to music: towards language-sensitive emotion recognition models. 28th European Signal Processing Conference (EUSIPCO 2020). Amsterdam, The Netherlands (virtual). January 2021.
- ❖ Gómez-Cañón, J.S., Cano, E., Herrera, P., & Gómez, E. (2020). Joyful for You and Tender for Us: the Influence of Individual Characteristics and Language on Emotion Labeling and Classification. 21st Conference of the International Society for Music Information Retrieval (ISMIR 2020). Montreal, Canada (virtual). October 2020.
- ❖ Pandrea, A. G., Gómez-Cañón, J. S., & Herrera, P. (2020). Cross-dataset Music Emotion Recognition: an end-to-end approach. Late Breaking/Demo in the 21st Conference of the International Society for Music Information Retrieval (ISMIR 2020). Montreal, Canada (virtual). October 2020.
- ❖ Chandna, P., Cuesta, H. & Gómez, E. (2020). A Deep Learning Based Analysis-Synthesis Framework for Unison Singing. 21st Conference of the International Society for Music Information Retrieval (ISMIR 2020). Montreal, Canada (virtual). October 2020.

¹³ <https://transactions.ismir.net/collections/special/20th-anniversary-of-ismir/>

- ❖ Cuesta, H., McFee, B., & Gómez, E. (2020). Multiple F0 Estimation in Vocal Ensembles using Convolutional Neural Networks. 21st Conference of the International Society for Music Information Retrieval (ISMIR 2020). Montreal, Canada (virtual). October 2020.

3.2 Invited talks for professional audiences

- ❖ TROMPA will be presented at the MIRAGE workshop¹⁴ in June 2021, University of Oslo.
- ❖ Emilia Gómez was an invited speaker at SONY in April, 2021 with a talk titled “Human behaviour and machine intelligence”.
- ❖ Cynthia Liem was invited to speak for Hesiodos, creative magazine in Delft, in April 2021 with a talk titled “Why AI needs artists.”
- ❖ Jordi Janer was invited to give a talk on April 7 2021 about “Cantamus - rehearsal tool for choir singers” at ESMUC (Higher Music School of Catalonia), as part of the workshop organized together with the professional ensemble Cantoría¹⁵.
- ❖ Lorenzo Porcaro was invited to participate in the panel “Promises and challenges of technology and gender”, in the context of the “MUTEK Symposium: a future without gender” organized by the festival of digital creativity and electronic music MUTEK. April 21st, 2021.
- ❖ Cynthia Liem was invited to give a talk at a day of the NVMB national association for music libraries, music archives and music documentation centers in November of 2020 with a talk titled “Hidden treasures along the digital highway.”
- ❖ Cynthia Liem was invited to give a talk as the invited speaker to kick off the Culture & Media domain-specific working group of the Netherlands AI Coalition in September of 2020.

3.4 Organization of outreach events and media

- ❖ Several members of the TROMPA team helped coordinate MELDFest 2.0. The event was a three-day long virtual event over two sessions, in November 2020 and February 2021, surrounding the infrastructure shared across several TROMPA use-case prototypes. The event is detailed in a blog post on the TROMPA website (also listed below).¹⁶
- ❖ TROMPA was featured in CORDIS, European Commission's primary source of results from the projects funded by the EU's framework programmes for research and innovation (FP1 to Horizon 2020)¹⁷

4. Dissemination Geared to the General Audience

Here we report on non-academic events or media appearances specifically aimed at the general public. The dissemination listed here reflects TROMPA’s attempt to use text based resources in order

¹⁴ <https://www.uio.no/ritmo/english/projects/mirage/events/2021/symposium/index.html#toc2>

¹⁵ <http://esmuc.cat/Viu-l-Esmuc/Actualitat/Noticies/Concert-participatiu-Intel-ligencia-artificial-al-servei-del-cant-coral>

¹⁶ <https://trompamusic.eu/node/129>

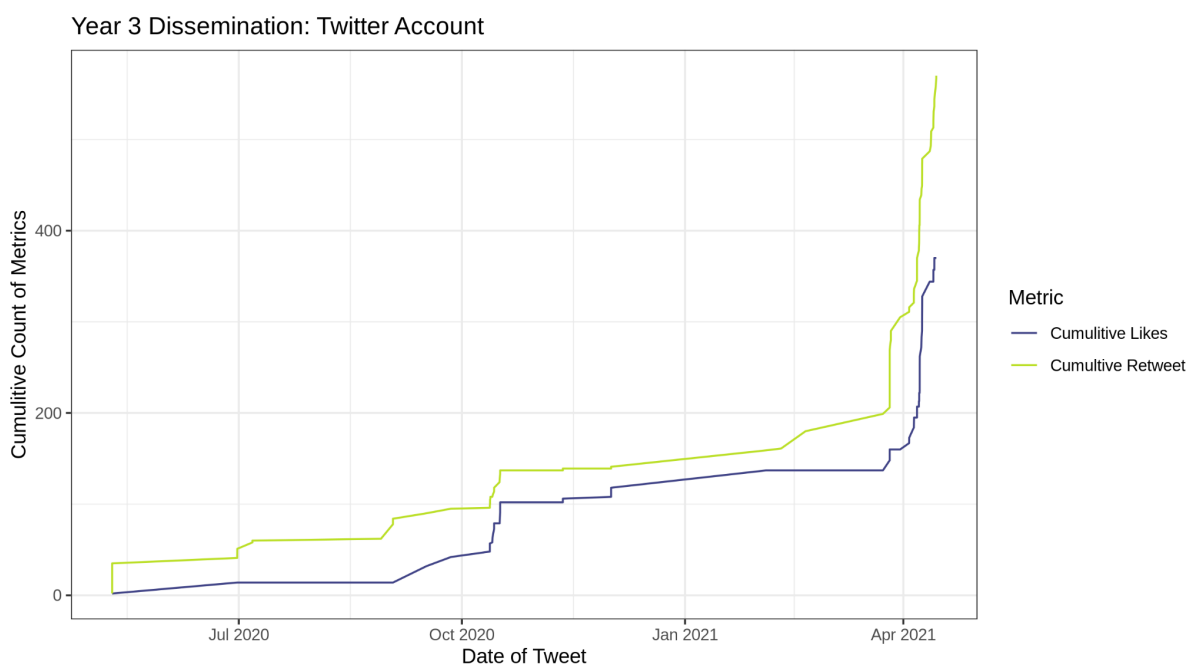
¹⁷

https://cordis.europa.eu/article/id/429046-discover-classical-music-in-new-ways-thanks-to-trompa?WT.mc_id=exp

to make up for the lack of invited talks and in-person events held during the COVID-19 global pandemic.

Social Media

TROMPA also took advantage of using Twitter to disseminate findings to a large and active audience. In the final year of TROMPA, the team accumulated 370 favorites and 570 retweets across the 103 tweets from the account. At the time of writing, the accounts analytics dashboard estimated that in the 28 days prior, tweets from the account made 37,500 unique impressions. The image below visualizes the activity on the account over the final year.



Presentations

- ❖ Nicolás Gutiérrez did a presentation about Trompa Music Enthusiasts pilot in Stucum Barcelona (a vocational training institute) on March 5th, with 25 attendees.

Press Appearances

- ❖ Cynthia Liem was featured in the ‘Pioneering AI for Digital Cultural Heritage’ series of Europeana Pro¹⁸
- ❖ Emilia Gómez presented TROMPA and the Choir Singing participatory concert at Spanish [National Radio](#), Radio Clásica, Longitud de Onda
- ❖ Emilia Gómez presented TROMPA at a program on AI and music at the [Spanish Radio](#).
- ❖ Emilia Gómez presented Trompa at Popap program on [Catalunya Ràdio](#) (43’)

¹⁸

<https://pro.europeana.eu/post/pioneering-ai-for-digital-cultural-heritage-an-interview-with-dr-cynthia-liem>

- ❖ Jorge Losana, conductor of Cantoría, presented the participatory concert at Assaig general program on [Catalunya Ràdio](#).
- ❖ "Cantāmus" herramienta en línea que permite aprender el repertorio de los cantantes", Plaza Pública, [Regional Radio from Murcia](#), Spain
- ❖ Music Enthusiasts campaign announced in [La Vanguardia](#) news press.
- ❖ Cynthia Liem featured in the inaugural 'Snoek op Zolder' podcast series for the [Netherlands AI coalition](#).
- ❖ The role of intuition in musical performance, [News](#) from Universitat Pompeu Fabra.
- ❖ Recommendation algorithms could be increasing the gender gap in music, [News](#) from Universitat Pompeu Fabra
- ❖ Emilia Gomez was interviewed at *Artificial intelligence and creativity*, [xataka online journal](#).
- ❖ Emilia Gomez explains music information retrieval research at [El Pais Semanal](#).
- ❖ Lorenzo Porcaro was interviewed at TV3 (Catalan public television) on the impact of recommender systems on [gender bias](#).
- ❖ Vladimir Viro of Peachnote gave an interview to Bavarian Radio (BR2) on April 15th 2021. about the advances of computer-based music analysis. ¹⁹
- ❖ International Voice Day. Short radio capsule about Cantamus/ChoirSingersPilot on [CatalunyaRadio](#).

Year Three Blog Posts

- ❖ Release of MELD 2.0²⁰
- ❖ Short post linking to article in CORDIS, see above ²¹
- ❖ Detailed post summarizing collaboration between TROMPA and Cantoria ²²
- ❖ Short post introducing third and final music enthusiasts contest ²³
- ❖ Detailed post describing MELDfest ²⁴
- ❖ Detailed post describing score digitization task presented at ISMIR2020 ²⁵
- ❖ Detailed post on Cantoria collaboration ²⁶
- ❖ Introduction of Digitization Task ²⁷
- ❖ Choral Pilot Updates ²⁸
- ❖ Music Enthusiasts Pilot Introduction ²⁹
- ❖ Liem Speaks at Karajan Music Tech ³⁰
- ❖ COVID Resources for Online Engagement ³¹

¹⁹ Airing date not yet known as of this writing

²⁰ <https://trompamusic.eu/node/144>

²¹ <https://trompamusic.eu/node/143>

²² <https://trompamusic.eu/index.php/choir-singers/cantoria-esmuc--concert>

²³ <https://trompamusic.eu/node/131>

²⁴ <https://trompamusic.eu/node/129>

²⁵ <https://trompamusic.eu/node/124>

²⁶ <https://trompamusic.eu/node/123>

²⁷ <https://trompamusic.eu/index.php/node/117>

²⁸ <https://trompamusic.eu/node/113>

²⁹ <https://trompamusic.eu/node/112>

³⁰ <https://trompamusic.eu/index.php/kmt2020>

³¹ <https://trompamusic.eu/index.php/covid>

Appendix A. List of Academic Publications

A.1 Journal articles

- ❖ Weigl, D., Crawford, T., Gkiokas, A., Goebel, W., Gómez, E., Gutiérrez, N., Liem, C., & Santos, P. (*accepted*) FAIR Interconnection and Enrichment of Public-Domain Music Resources on the Web. *Empirical Musicology Review*.
- ❖ Rosenzweig, S., Cuesta, H., Weiß, C., Scherbaum, F., Gómez, E. and Müller, M., (2020). Dagstuhl ChoirSet: A Multitrack Dataset for MIR Research on Choral Singing. *Transactions of the International Society for Music Information Retrieval*, 3(1), pp.98–110.³²

A.2 Peer-reviewed conferences and workshops

Submitted

- ❖ Goebel, W. and Weigl, D. (*submitted*) Alleviating the last mile of encoding: The mei-friend package for the Atom text editor. *Music Encoding Conference 2021*.
- ❖ Bastas G., Gkiokas A., Katsouros V. and Maragos P., Convolutional Networks for Visual Onset Detection in the Context of Bowed String Instrument Performances. (*submitted*). *Sound and Music Computing Conference 2021*.
- ❖ Samiotis, I. P., Lofi, C., & Bozzon, A. (2021). Hybrid Annotation Systems for Music Transcription. (*submitted*). *3rd International Workshop on Reading Music Systems (WoRMS 2021)*.

2021

- ❖ Weigl, D., Goebel, W., Baker, D., Crawford, T., Zubani, F., Gkiokas, A., Paez, N., Porter, A. and Santos P. (*accepted*) Notes on the Music: A social data infrastructure for music annotation. *Digital Libraries for Musicology 2021*.
- ❖ Crawford, T. Zubani, F., Porter, A., Weigl, D. (*accepted*). TROMPA and F-TEMPO projects work together: Content-based searching from within a score. *Poster for Digital Libraries for Musicology 2021*.
- ❖ Weigl, D. and Goebel, W. (2021). Playing with a Web of Music: Connecting and enriching online music repositories. In Matej Santi and Elias Berner (Eds.) *Music – Media – History: Re-Thinking Musicology in an Age of Digital Media*. transcript publishing. ISBN: 9783837651454.
- ❖ Gover, M., Sarasúa, Á., Parra, H., Janer, J., Mayor, O., Cuesta, H., Pascual, M.P., Gkiokas, A., & Gómez, E. (2021). Choir Singers Pilot -- An online platform for choir singers practice. *Accepted at Web Audio Conference*.
- ❖ Freire, A., Porcaro, L., & Gómez, E. (2021). Measuring Diversity of Artificial Intelligence Conferences. *AAAI Workshop on Diversity in Artificial Intelligence (AIDBEI 2021)*
- ❖ Gómez-Cañón, J.S., Cano, E., Pandrea, A.G., Herrera, P., & Gómez, E. (2021). Language-sensitive music emotion recognition models: are we really there yet?. *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2021)*.
- ❖ Gómez-Cañón, J.S., Gutiérrez-Páez, N., Porcaro, L., Gkiokas, A., Herrera, P., & Gómez, E. (2021). Improving emotion annotation of music using citizen science. *Extended abstract*

³² <http://doi.org/10.5334/tismir.48>

accepted at the 16th International Conference on Music Perception and Cognition (ICMPC-ESCOM 2021).

2020

- ❖ Bastas G., Gkiokas A., Katsourous V. and Maragos P., Improving Audio Onset Detection for String Instruments by Incorporating Visual Modality. Music and Machine Learning Workshop, 2020 (MML 2020).
- ❖ Weigl, D., Goebel, W., Hofmann, A., Crawford, T., Zubani, F., Liem, C., & Porter, A. (2020). Read/Write Digital Libraries for Musicology. 7th International Conference on Digital Libraries for Musicology (DLfM2020).
- ❖ Gkiokas A., Beat Tracking from Onset Streams Using LSTM Neural Networks. Music and Machine Learning Workshop, 2020 (MML 2020).
- ❖ Shakespeare, D., Porcaro, L., Gómez, E., & Castillo, C. (2020) Exploring Artist Gender Bias in Music Recommendation. 2nd Workshop on the Impact of Recommender Systems (ImpactRS), at the 14th ACM Conference on Recommender Systems (RecSys 2020)
- ❖ Samiotis, I. P., Qiu, S., Mauri, A., Liem, C. C., Lofi, C., & Bozzon, A. (2020). Microtask crowdsourcing for music score Transcriptions: an experiment with error detection. 21st Conference of the International Society for Music Information Retrieval (ISMIR 2020). Montreal, Canada (virtual). October 2020.
- ❖ Sarasúa, Á., Janer, J., Mayor, O., Bonada J., & Blaauw. M. (2020). Choir Singing Synthesis for Rehearsal Tools with Large-scale Multilingual Repertoires. Demo accepted at 2020 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2020)
- ❖ Schreiber, H., Urbano, J. & Müller, M. (2020). Music Tempo Estimation: Are we done yet?. Transactions of the International Society for Music Information Retrieval, vol. 3, no. 1, pp. 111-125, 2020.³³
- ❖ Weigl, D. and Goebel, W. (2020). Rehearsal Encodings with a Social Life. Music Encoding Conference (MEC2020).

³³ <https://transactions.ismir.net/articles/10.5334/tismir.43>

Appendix B: Music Encodings (MEI format)

https://github.com/trompamusic-encodings/Beethoven_Op119_BreitkopfHaertel	11 Bagatelles, Opus 119 by Ludwig van Beethoven, encoding of Breitkopf und Härtel edition, 1862–90. Plate B.189.
https://github.com/trompamusic-encodings/Beethoven_Op120_BreitkopfHaertel	33 Veränderungen über einen Walzer von A. Diabelli, Op. 120 by Ludwig van Beethoven, encoding of Breitkopf und Härtel edition, 1862–90. Plate B.165.
https://github.com/trompamusic-encodings/Beethoven_Op126_BreitkopfHaertel	6 Bagatelles, Opus 126 by Ludwig van Beethoven, encoding of Breitkopf und Härtel edition, 1862–90. Plate B.190, with corrections from holograph manuscript
https://github.com/trompamusic-encodings/Beethoven_Op129_BreitkopfHaertel	Rondo a Capriccio in G major, Op. 129 by Ludwig van Beethoven, encoding of Breitkopf und Härtel edition, 1862–90. Series 18 Plate B.191.
https://github.com/trompamusic-encodings/Beethoven_Op28_HenleUrtext	Sonate Op. 28 by Ludwig van Beethoven, encoding of Henle Urtext edition, 1976, Plate HN1032.
https://github.com/trompamusic-encodings/Beethoven_Op31_No2_HenleUrtext	Sonata Op. 31 No. 2 by Ludwig van Beethoven, encoding of Henle Urtext edition, 1976, Plate HN1034
https://github.com/trompamusic-encodings/Beethoven_Op31_No3_HenleUrtext	Sonata Op. 31 No. 3 by Ludwig van Beethoven, encoding of Henle Urtext edition, 1976, Plate HN1034
https://github.com/trompamusic-encodings/Beethoven_Op33_BreitkopfHaertel	Sieben Bagatellen, Opus 33 by Ludwig van Beethoven, encoding of Breitkopf und Härtel edition, 1862–90. Plate B.183.
https://github.com/trompamusic-encodings/Beethoven_Op34_BreitkopfHaertel	Six Variations, Opus 34 by Ludwig van Beethoven, encoding of Breitkopf und Härtel edition, 1862–90. Plate B.162.
https://github.com/trompamusic-encodings/Beethoven_Op35_BreitkopfHaertel	Eroica Variations, Opus 35 by Ludwig van Beethoven, encoding of Breitkopf und Härtel edition, 1862–90. Plate B.163.
https://github.com/trompamusic-encodings/Beethoven_Op51_BreitkopfHaertel	Two Rondos, Opus 51 No.1 and Opus 51 No. 2 by Ludwig van Beethoven, encoding of Breitkopf und Härtel edition, 1862–90. Plates B.185 and B.186.
https://github.com/trompamusic-encodings/Beethoven_Op53_HenleUrtext	Sonata Op. 53 by Ludwig van Beethoven, encoding of Henle Urtext edition, 1976, Plate HN1034
https://github.com/trompamusic-encodings/Beethoven_Op77_BreitkopfHaertel	Phantasie, Opus 77 by Ludwig van Beethoven, encoding of Breitkopf und Härtel edition, 1862–90. Plate B.187.
https://github.com/trompamusic-encodings/Beethoven_Op89_BreitkopfHaertel	Polonaise, Opus 89 by Ludwig van Beethoven, encoding of Breitkopf und Härtel edition, 1862–90. Plate B.188.
https://github.com/trompamusic-encodings/Beethoven_WoO57_BreitkopfHaertel	Andante favori in F major, WoO 57 by Ludwig van Beethoven, encoding of Breitkopf und Härtel edition, 1862–90. Plate B.192.
https://github.com/trompamusic-encodings/Beethoven_WoO59_BreitkopfHaertel	Clavierstück „Für Elise“, WoO 59 by Ludwig van Beethoven, encoding of Breitkopf und Härtel edition, 1862–90. Plate B.298.
https://github.com/trompamusic-encodings/Beethoven_WoO64_BreitkopfHaertel	Six variations on a Swiss song, WoO64 by Ludwig van Beethoven, encoding of Breitkopf und Härtel edition, 1862–90. Plate B.177.
https://github.com/trompamusic-encodings/Beethoven_WoO65_BreitkopfHaertel	24 Variations on 'Vieni Amore' by Vincenzo Righini, WoO 65 by Ludwig van Beethoven, encoding of Breitkopf und Härtel edition, 1862–90. Plate B.178.
https://github.com/trompamusic-encodings/Beethoven_WoO69_BreitkopfHaertel	9 Variations, WoO 69 by Ludwig van Beethoven, encoding of Breitkopf und Härtel edition, 1862–90. Plate B.167.
https://github.com/trompamusic-encodings/Beethoven_WoO70_BreitkopfHaertel	6 Variations, WoO 70 by Ludwig van Beethoven, encoding of Breitkopf und Härtel edition, 1862–90. Plate B.168.
https://github.com/trompamusic-encodings/Beethoven_WoO71_BreitkopfHaertel	12 Variations on the Russian Dance 'Das Waldmädchen', WoO 71 by Ludwig van Beethoven, encoding of Breitkopf und Härtel edition,

	1862–90. Plate B.170.
https://github.com/trompamusic-encodings/Beethoven_WoO_80_BreitkopfHaertel	Variations in c minor, WoO 80 by Ludwig van Beethoven, encoding of Breitkopf und Härtel edition, 1862–90. Plate B.181.
https://github.com/trompamusic-encodings/Beethoven_WoO_Anh5_BreitkopfHaertel	Two Sonatinas for Piano, WoO Anh.5 by Ludwig van Beethoven, encoding of Breitkop und Härtel edition, 1862–90. Plate B.160 and B.161.
https://github.com/trompamusic-encodings/Mahler_Symphony_No4_Doblinger-4hands	Symphony No. 4 by Gustav Mahler, encoding of 4-hands arrangement by Josef V. Wöss, Ludwig Doblinger Edition, Plate 33, 1902.
https://github.com/trompamusic-encodings/Schumann-Clara_Romanze-in-a-Moll	Romanze in a-Moll, WoO 28, by Clara Schumann, encoding of Autograph, 1853.

Appendix C: Software

DigitalScoreEdition	https://github.com/trompamusic/DigitalScoreEdition	TROMPA Digital Score Edition technical demo
beat-annotator	https://github.com/trompamusic/beat-annotator	App to annotate beats on audio files
ce-api	https://github.com/trompamusic/ce-api	The Contributor Environment API for the TROMPA project
ce-data-import	https://github.com/trompamusic/ce-data-import	tool to import metadata from external data sources into the contributor environment
ce-import-muziekweb	https://github.com/trompamusic/ce-import-muziekweb	
ce-poc-algorithm	https://github.com/trompamusic/ce-poc-algorithm	This repository contains an algorithm and interface POC for running ControlActions from the CE-API
clara	https://github.com/trompamusic/clara	CLARA: Companion for Long-term Analyses of Rehearsal Attempts
crowd_task_manager	https://github.com/trompamusic/crowd_task_manager	A system to create, schedule and distribute crowdsourcing tasks
intonation-assessment	https://github.com/helena-cuesta/intonation-assessment	Automatic intonation assessment for the TROMPA Choir Singers use case.
quad-pred	https://github.com/juansgomez87/quad-pred	Language-sensitive denoising autoencoders for music emotion recognition.
lang-sens-mer	https://github.com/juansgomez87/lang-sens-mer/	Contrastive Predictive Coding for language-sensitive music emotion recognition.
mei-friend	https://github.com/trompamusic/mei-friend	A friendly companion that helps you edit and improve digital score encodings in MEI format. Extension to the Atom editor.
music-enthusiast-rs	https://github.com/trompamusic/music-enthusiast-rs	Emotion-based Music Recommendations for the TROMPA Music Enthusiast use case
music-scholars-annotator	https://github.com/trompamusic/music-scholars-annotator	A tool for creating annotations of musical scores
scriptoria	https://github.com/trompamusic/scriptoria	A set of web-based interfaces for music transcription.
selectable-score	https://github.com/trompamusic/selectable-score	Simplified selectable score wrapper for meld-clients-core Score component

selectable-score-demo	https://github.com/trompamusic/selectable-score-demo	Minimal example application demonstrating use of the TROMPA selectable-score component
solid-filemanager	https://github.com/trompamusic/solid-filemanager	A React-based Solid pod filebrowser with iframe support.
solid-oidc-app-permission	https://github.com/trompamusic/solid-oidc-app-permission	A utility for performing solid Web Application Authentication
tpc	https://github.com/trompamusic/tpc	Trompa Processing Library
trompa-align	https://github.com/trompamusic/trompa-align	MIDI performance to MEI score alignment tool for use with CLARA
trompa-annotation-component	https://github.com/trompamusic/trompa-annotation-component	Javascript tools and interfaces for making annotations of trompa entities
trompa-campaign-manager	https://github.com/trompamusic/trompa-campaign-manager	Repository for the https://campaigns.trompamusic.eu website
trompa-multimodal-component	https://github.com/trompamusic/trompa-multimodal-component	This repository contains the source code for the Multimodal Component React library for the TROMPA project
trompa-multimodal-component-example	https://github.com/trompamusic/trompa-multimodal-component-example	Archived (12-03-2021): this repository is outdated. Please follow the examples in the trompa-multimodal-component documentation.
trompace-client	https://github.com/trompamusic/trompace-client	A python library to read from and write to the Trompa CE
verovio-select	https://github.com/trompamusic/verovio-select	interactive tool to select parts of scores rendered by verovio
vocab.trompamusic.eu	https://github.com/trompamusic/vocab.trompamusic.eu	RDF Vocabulary of TROMPA terms