

# Collaborative Song Dataset (CoSoD): An Annotated Dataset of Multi-Artist Collaborations in Popular Music

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## Overview

- Collaborations between two or more artists are common in popular music



**“Dancing with a Stranger” (2019)**  
Sam Smith & Normani

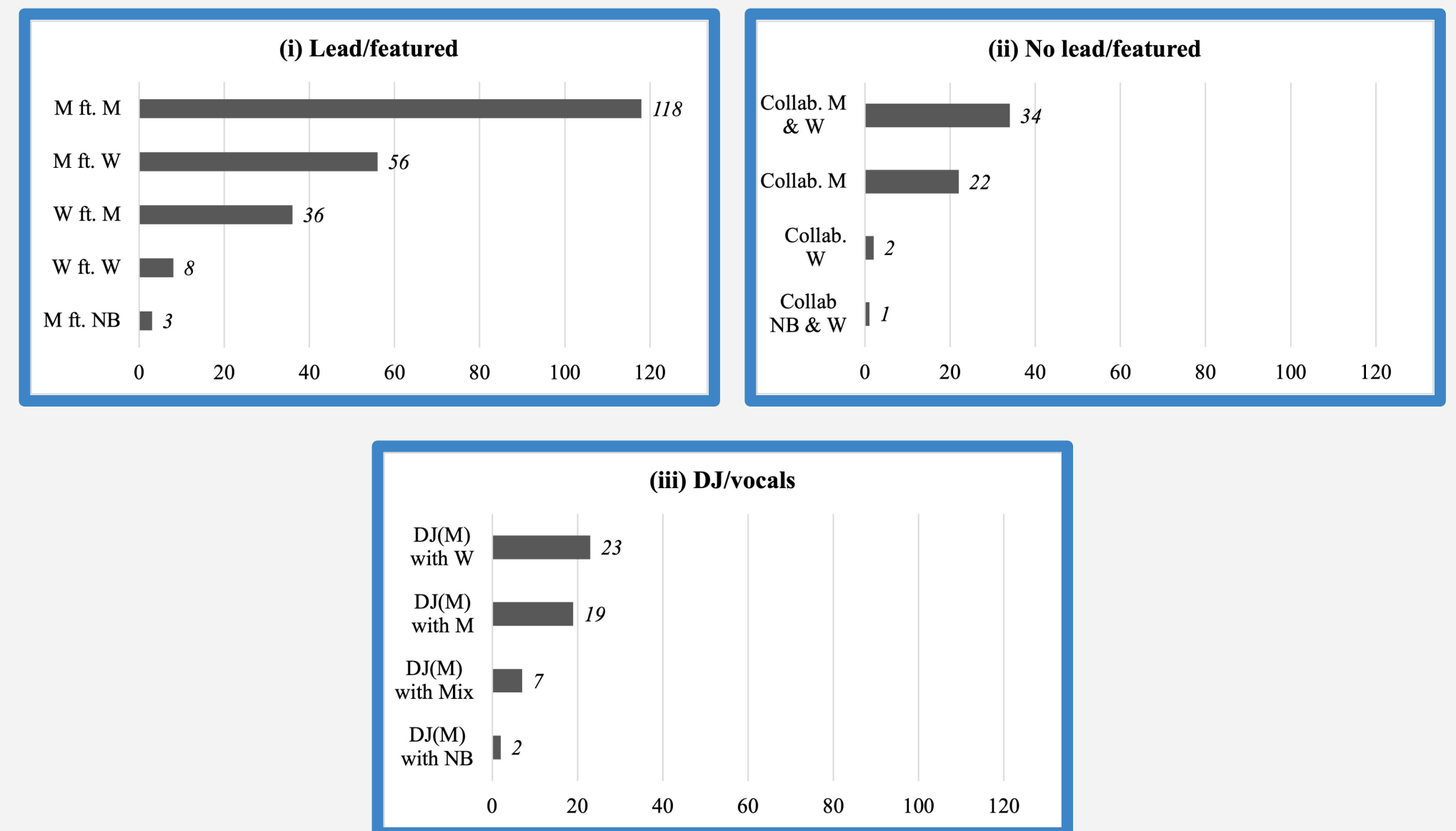


**“No Limit” (2018)**  
G-Eazy ft. A\$AP Rocky  
& Cardi B

- CoSoD is the first dataset focusing exclusively on multi-artist collaborations
- CoSoD facilitates the study of various musical features in multi-artist collaborations

## Dataset Description

- Metadata and annotations for 331 songs
- All multi-artist collaborations on the *Billboard* “Hot 100” year-end charts (2010–2019)

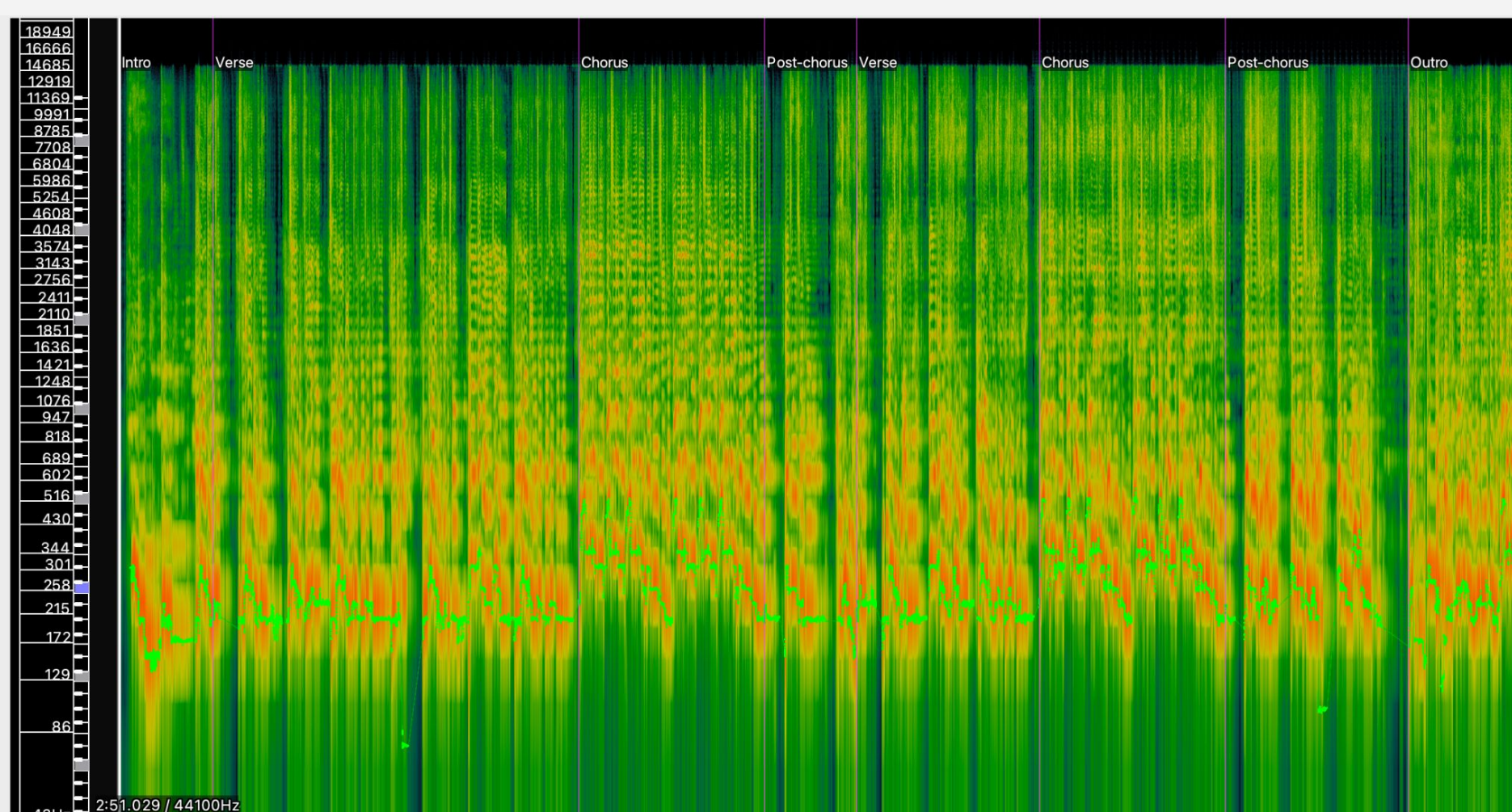


Full Dataset

## Annotations

- We provide metadata on year, chart position, title, artists, collaboration type, and gender of artists.
- We provide timed annotations on formal section, artists, gender, function, vocal delivery, pitch, environment, layering, and width (panning).

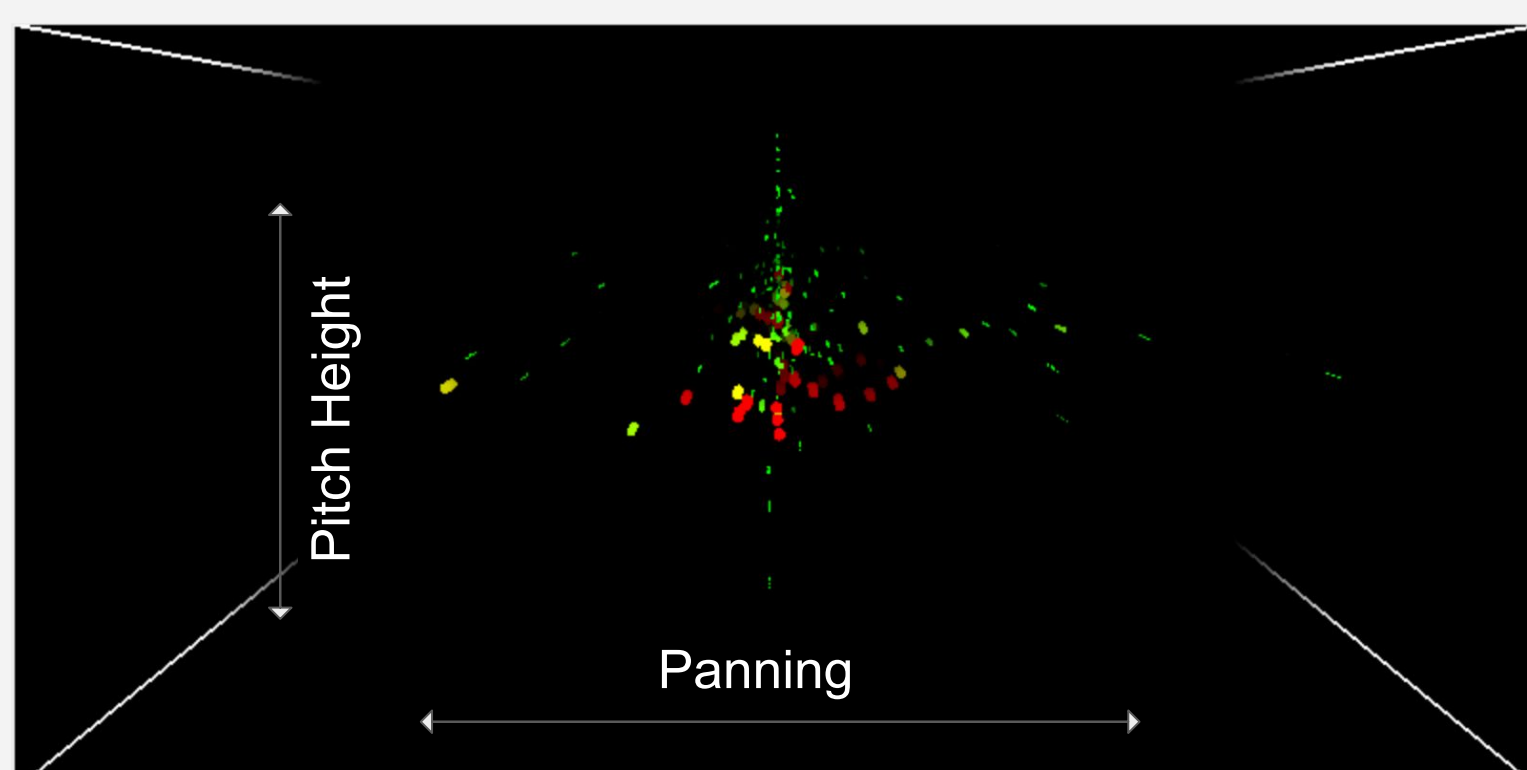
### Analyzing pitch and form



— pYIN Smoothed Pitch Track [1]  
— Formal sections

Screenshot from Sonic Visualiser  
“Dancing With a Stranger”  
Isolated vocals (Open Unmix [2])

### Analyzing width (panning)



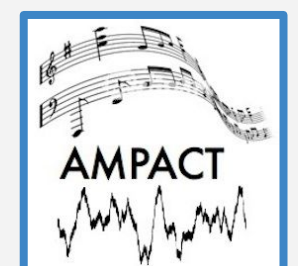
Screenshot from MarPanning [3]  
“Dancing With a Stranger”  
Isolated vocals, 0:05

Annotators: Michèle Duguay and Kate Mancey

## Potential Applications

- Training and evaluating structural segmentation tasks
- Studying the structural characteristics of collaborative songs
- Identifying mixing trends in post-2010 commercial music
- Comparing how various parameters are applied to individual artists’ voices within and across songs
- Studying the relationship between gender and popular music

### Future work



- Expanding the annotations in the dataset with time-aligned lyrics, harmonic analyses, and additional performance data with AMPACT [4]
- As we expand the dataset, considering ethical issues in encoding aspects of artists' identity

## References

- [1] M. Mauch and S. Dixon, “pyin: A fundamental frequency estimator using probabilistic threshold distributions,” in *2014 Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Florence, Italy, 2014, pp. 659–663.
- [2] F.-R. Stöter, S. Uhlich, A. Liutkus, and Y. Mitsufuji, “Open-unmix - a reference implementation for music source separation,” *Journal of Open Source Software*, 2019.
- [3] K. McNally, G. Tzanetakis, and S. R. Ness, “New tools for use in the musicology of record production,” *Unpublished Paper, University of Victoria*, 2009.
- [4] J. Devaney and M. Mandel, “Score-informed estimation of performance parameters from polyphonic audio using ampact,” in *Extended abstracts for the Late-Breaking Demo Session of the 17th International Society for Music Information Retrieval Conference*, 2016.



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